

ORTHOPAEDIC

Physical Therapy Practice

THE MAGAZINE OF THE
ORTHOPAEDIC SECTION, APTA



VOL. 18, NO. 1 2006

 **APTA**
American Physical Therapy Association
The Science of Healing. The Art of Caring.

Rehab

CARDON REHABILITATION PRODUCTS, INC.™

Wurlitzer Industrial Park, 908 Niagara Falls Blvd.

North Tonawanda, NY 14120

Telephone: 1-800-944-7868 • Fax: 716-297-0411

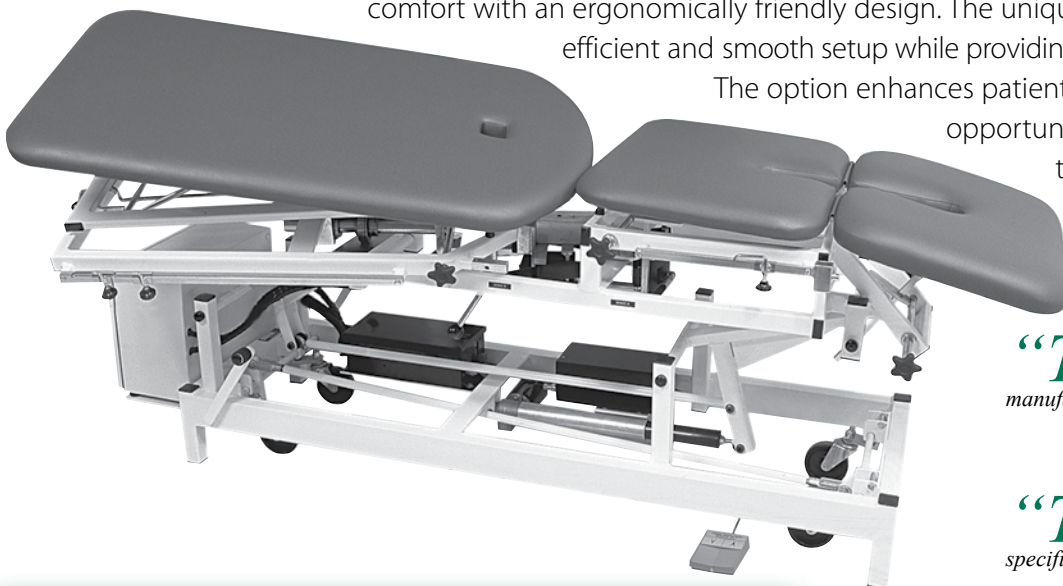
E-mail: sales@cardonrehab.com

THE ACCEPTED STANDARD OF PERFORMANCE

The Cardon Mobilization Table . . . Going beyond the third dimension . . .

Now available with the patented option which eliminates the use of flexion and rotation levers. This allows the therapist to perform advanced manual therapy techniques with complete confidence and comfort with an ergonomically friendly design. The unique design provides more efficient and smooth setup while providing superior patient comfort.

The option enhances patient care by allowing unsurpassed opportunity for more preciseness of treatment and monitoring of segments and joints.



“The design and concepts make this the best mobilization table manufactured today.”

Professor Freddy Kaltenborn
Autho, Int'l Lecturer in Manual Therapy

“The various sections have minimum flex allowing very accurate application of specific manual therapy techniques.”

Olaf Evjenth
Author, Int'l Lecturer in Manual Therapy

YES! I would like to preview the Cardon Mobilization Table.

Please rush your 15 minute VHS video (for standard model):

Name: _____ Title: _____

Clinic/Institution: _____

Address: _____

City: _____ State: _____ Zip Code: _____

Telephone: _____ Signature: _____

Rehab

CARDON REHABILITATION PRODUCTS, INC.™

Wurlitzer Industrial Park, 908 Niagara Falls Blvd.

North Tonawanda, NY 14120

Telephone: 1-800-944-7868 • Fax: 716-297-0411

E-mail: sales@cardonrehab.com

SEE FOR YOURSELF THESE OUTSTANDING FEATURES:



- Accurate localization of the vertebral segment
- Precision and versatility of technique
- Absolute control of the mobilization forces
- Excellent stability for manipulation.



Choose the company with the highest commitment to quality products, support and education.



sEMG is not just for knees and shoulders...

2006 Accredited Professional Development Courses in Pelvic Muscle Dysfunction and Stabilization

Foundations: External Evaluation & Treatment for the Pelvis & Pelvic Floor

Kathe Wallace, P.T., BCIA-PMDB
February 11 & 12 • Jacksonville, Florida
May 6 & 7 • San Diego, California

Female Pelvic Floor Function, Dysfunction & Treatment - Level 1 - Beginner

Hollis Herman, P.T., O.C.S., M.S., BCIA-PMDB
and Kathe Wallace, P.T., BCIA-PMDB
March 31, April 1 & 2 • Miami, Florida
June 15, 16 & 17 • Boston, Massachusetts
October 20, 21 & 22 • San Diego, California
December 1, 2 & 3 • Chicago, Illinois

Pelvic Floor Function, Dysfunction & Treatment - Level 2A - Intermediate

Colorectal and Coccyx Conditions,
Male Pelvic Floor, Pudendal Nerve Entrapment
Hollis Herman, P.T., O.C.S., M.S., BCIA-PMDB
and Kathe Wallace, P.T., BCIA-PMDB
April 21, 22 & 23 • St. Louis, Missouri
July 21, 22 & 23 • Seattle, Washington

Pelvic Floor Function, Dysfunction & Treatment - Level 2B - Intermediate

Urogynecologic Examination and Treatment Intervention
Hollis Herman, P.T., O.C.S., M.S., BCIA-PMDB
and Kathe Wallace, P.T., BCIA-PMDB
May 19, 20 & 21 • Minneapolis, Minnesota
November 3, 4 & 5 • Secaucus, New Jersey

Advanced Pelvic Floor Function, Dysfunction & Treatment - Level 3 - Advanced

Hollis Herman, P.T., O.C.S., M.S., BCIA-PMDB
March 10, 11 & 12 • Columbia, Maryland
September 15, 16 & 17 • Minneapolis, Minnesota

Pregnancy & Postpartum: Clinical Highlights

Hollis Herman, P.T., O.C.S., M.S., BCIA-PMDB
February 25 & 26 • Tucson, Arizona
May 6 & 7 • Boston, Massachusetts
September 30 & October 1 • Chicago, Illinois

Pediatric Incontinence & Pelvic Floor Dysfunction

Dawn Sandalcidi, P.T., R.C.M.T.
October 21 & 22 • Baltimore, Maryland

SIJ Evaluation & Manual Therapy Treatment: Using Pelvic Floor, Transversus Abdominus

& Multifidus Stabilization
Dawn Sandalcidi, P.T., R.C.M.T.
April 22 & 23 • Richmond, Virginia
August 26 & 27 • Seattle, Washington
November 18 & 19 • Chicago, Illinois

Urological & Gynecological Pain Syndromes: The Musculoskeletal Connection

Erica Fletcher, P.T., M.T.C.
March 24, 25 & 26 • Chicago, Illinois
June 16, 17 & 18 • Austin, Texas
August 18, 19 & 20 • Madison, Wisconsin
October 13, 14 & 15 • Phoenix, Arizona

Biopsychosocial Model of Pelvic Floor Dysfunction

MJ Strauhl, P.T.
March 11 & 12 • Richmond, Virginia
November 4 & 5 • Portland, Oregon

Beyond Kegels: Bladder Health & the Pelvic Rotator Cuff

Janet A. Hulme, M.A., P.T.
March 17 & 18 • Baltimore, Maryland
May 5 & 6 • Minneapolis, Minnesota
August 18 & 19 • Las Vegas, Nevada
October 6 & 7 • Portland, Oregon
November 17 & 18 • Chicago, Illinois

Beyond Kegels II: Advanced Techniques & Special Populations

Janet A. Hulme, M.A., P.T.
May 7 • Minneapolis, Minnesota
August 20 • Las Vegas, Nevada
October 8 • Portland, Oregon
November 19 • Chicago, Illinois

Rotator Cuff of the Pelvis Functional Relationship in Low Back Pain, Sacroiliac Dysfunction, Balance & Gait, Bladder & Bowel Health

Janet A. Hulme, M.A., P.T.
February 24 & 25 • Tampa, Florida
April 21 & 22 • Columbia, Maryland
May 19 & 20 • Chicago, Illinois
October 20 & 21 • Minneapolis, Minnesota

Chronic Pelvic Pain & Low Back Pain

Janet A. Hulme, M.A., P.T.
February 26 • Tampa, Florida
March 19 • Baltimore, Maryland
April 23 • Columbia, Maryland
May 21 • Chicago, Illinois
October 22 • Minneapolis, Minnesota



The Prometheus Group™

One Washington Street, Suite 303, Dover, NH 03820

1-800-442-2325 • FAX 1-603-749-0511

Email: info@theprogrp.com



For more information about our products or courses, call us at 1-800-442-2325 or visit our website at www.theprogrp.com

Stretching the limits of End Range of Motion since 1991

Get Motion

get results, and get your patient back on track

ERMI's in-home mechanical therapy devices give patients control of getting motion so you can focus on strengthening, muscle coordination and other modalities during clinic sessions.

Our Philosophy is Different.

At ERMI we focus on patients with severe motion loss.

We provide patients with home-therapy devices that

- mimic in-clinic manual therapy
- are easy and convenient to use
- provide rapid motion increases

***Our results are proven...
and the outcome is guaranteed!***

"The Knee Extensionater served as my therapist when I was away from physical therapy."

Sarah Jane Whitlock



Featuring the Knee Extensionater

The Knee Extensionater is a portable, easy-to-use device that allows patients with flexion contractures to work on improving extension at home, at work or just about anywhere they go. The device uses a comfortably fitting air bladder to accomplish overpressure therapy with more precision and without the discomfort of the traditional hanging of weights.

Other ERMI Devices include...

Extensionater Devices



MPJ Extension



Elbow Extension and Flexion

Flexionater Devices



Shoulder External Rotation and Abduction

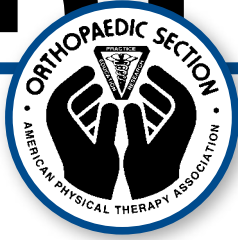


Ankle/Knee Flexion

ermi, inc.
End Range of Motion Improvement

(877) 503-0505 • GetMotion.com

ORTHOPAEDIC



Physical Therapy Practice

VOL. 18, NO. 1 2006

inthisissue

- 8** | Temporomandibular Joint and Anterior Disk Displacement
Snigdha Bijjiga-Haff
- 14** | An Analysis to Define the Clinical Practice of Physical Therapy for Performing Artists
Jennifer M. Gamboa, Marshall Hagins, Tara Jo Manal
- 29** | In the Spotlight
Tom McPoil, PT, PhD, ATC
- 35** | CSM 2006 Award Recipients
- 39** | Board of Director Meeting Minutes
- 41** | CSM 2006 Annual Membership Meeting Minutes

regularfeatures

- 5** | Editor's Corner
- 6** | President's Message
- 32** | Book Reviews
- 33** | Web Watch
- 34** | Treasurer's Report
- 45** | Occupational Health SIG Newsletter
- 49** | Foot and Ankle SIG Newsletter
- 52** | Pain Management SIG Newsletter
- 56** | Performing Arts SIG Newsletter
- 59** | Animal Physical Therapy SIG Newsletter
- 64** | Index to Advertisers

optpmission

The mission of the Orthopaedic Section of the American Physical Therapy Association is to be the leading advocate and resource for the practice of Orthopaedic Physical Therapy. The Section will serve its members by fostering quality patient/client care and promoting professional growth through:

- enhancement of clinical practice,
- advancement of education, and
- facilitation of quality research.

publicationstaff

Managing Editor & Advertising

Sharon L. Klinski
Orthopaedic Section, APTA
2920 East Ave So, Suite 200
La Crosse, Wisconsin 54601
800-444-3982 x 202
608-788-3965 FAX
Email: sklinski@orthopt.org

Editor

Christopher Hughes, PT, PhD, OCS

Advisory Council

Joe Kleinkort, PT, MA, PhD, CIE
Lori Michener, PT, PhD, ATC, SCS
Becky Newton, MSPT
Stephen Paulseth, PT, MS
Robert Rowe, PT, DMT, MHS, FAAOMPT
Gary Smith, PT, PhD
Michael Wooden, PT, MS, OCS

Publication Title: *Orthopaedic Physical Therapy Practice* **Statement of Frequency:** Quarterly; April, June, August, and December

Authorized Organization's Name and Address: Orthopaedic Section, APTA, Inc., 2920 East Avenue South, Suite 200, La Crosse, WI 54601-7202

Orthopaedic Physical Therapy Practice (ISSN 1532-0871) is the official magazine of the Orthopaedic Section, APTA, Inc. Copyright 2006 by the Orthopaedic Section/APTA. Nonmember subscriptions are available for \$30 per year (4 issues). Opinions expressed by the authors are their own and do not necessarily reflect the views of the Orthopaedic Section. The editor reserves the right to edit manuscripts as necessary for publication. All requests for change of address should be directed to the La Crosse Office.

All advertisements which appear in or accompany *Orthopaedic Physical Therapy Practice* are accepted on the basis of conformation to ethical physical therapy standards, but acceptance does not imply endorsement by the Orthopaedic Section.


Orthopaedic Physical Therapy Practice is indexed by Cumulative Index to Nursing & Allied Health Literature (CINAHL).

Orthopaedic Section Directory

officers

<p>President: Michael T. Cibulka, DPT, MHS, OCS Jefferson County Rehab & Sports Clinic 1330 YMCA Drive, Suite 1200 Festus, MO 63028 (636) 937-7677 (Office) (636) 931-8808 (FAX) mcibulka@earthlink.net Term: 2004 - 2007</p>	<p>Vice President: Thomas G. McPoil, Jr, PT, PhD, ATC 1630 W University Heights Drive South Flagstaff, AZ 86001 (928) 523-1499 (928) 523-9289 (FAX) tom.mcpoil@nau.edu Term 2004 - 2007</p>	<p>Treasurer: Joe Godges, DPT, MA, OCS Kaiser PT Residency & Fellowships 6107 West 75th Place Los Angeles, CA 90045-1633 (310) 215-3664 (Office) (310) 215-0780 (FAX) godges@msn.com Term: 2005-2008</p>	<p>Director 1: James Irrgang, PT, PhD, ATC University of Pittsburgh Department of Physical Therapy Sennett at Atwood Streets Pittsburgh, PA 15260 (412) 432-1237 (Office) (412) 647-1454 (FAX) irrgangj@msx.upmc.edu Term: 2003-2009</p>	<p>Director 2: William H. O'Grady, PT, DPT, OCS, FAAOMPT, AAPM 1214 Starling St Steilacoom, WA 98388-2040 (253) 588-5662 (Office) w.ogrady@comcast.net Term: 2005-2008</p>
---	--	--	---	--

chairs

<p>MEMBERSHIP Chair: Scott Adam Smith, MPT 29 Lawrence Street Hicksville, NY 11801 (516) 681-5647 (Office) smittypt14@aol.com</p> <p><i>Members: Hunter Bowie, Julia Chevan, John Childs, Melissa Corriveau, Lori Michener, Terry Trundle</i></p>	<p>EDUCATION PROGRAM Chair: Ellen Hamilton, PT, OCS 720 Montclair Road, Ste 100 Birmingham, AL 35213 (205) 298-9101 (205) 599-4535 (FAX) ellenhamiltonpt@bellsouth.net</p> <p>Vice Chair: Beth Jones, PT, DPT, MS, OCS</p> <p><i>Members: Dee Daley, Bob Duwall, Deborah Gross-Saunders, Kristinn Heindrichs, Joe Kleinkort, Deborah Lechner, David McCune, Tara Manal, Cheryl Mauer, Stephen Paulseth, Chris Powers, Christopher Scott, Jeff Stenbach</i></p>	<p>INDEPENDENT STUDY COURSE Editor: Mary Ann Wilmarth, DPT, MS, OCS, MTC, CertMDT 10 Nollet Dr Andover, MA 01810-6312 (978) 682-8802 mwilmarth@comcast.net</p> <p>Managing Editor: Kathy Olson (800) 444-3982, x213 kmolson@orthopt.org</p>	<p>ORTHOPAEDIC PRACTICE Editor: Christopher Hughes, PT, PhD, OCS School of Physical Therapy Slippery Rock University Slippery Rock, PA 16057 (724) 738-2757 cjh@nauticom.net</p> <p>Managing Editor: Sharon Klinski (800) 444-3982, x202 sklinski@orthopt.org</p>
<p>RESEARCH Chair: Lori Michener, PT, PhD, ATC, SCS 1128 West Ave Richmond, VA 23220 (804) 828-0234 (804) 828-8111 (FAX) lmichener@hsc.vcu.edu</p> <p><i>Members: Paul Beattie, Gregory Hicks, Sheri Silfies, Linda Van Dillen</i></p>	<p>ORTHOPAEDIC SPECIALTY COUNCIL Chair: Rob Landel, PT, DPT, OCS Division of Independent Health Professions University of Southern California 1540 E. Alcazar St, CHP 155 Los Angeles, CA 90033 (323) 442-2912 (323) 442-1515 (FAX) rlandel@hsc.usc.edu</p> <p><i>Members: Amiee Klein, Robert Johnson</i></p>	<p>PRACTICE Chair: Robert (Bob) H Rowe, PT, DMT, MHS, FAAOMPT 126 Oak Leaf Drive Slidell, LA 70461-5006 (985) 645-9329 rrowe@lsuhsc.edu</p> <p><i>Members: Bill Boissonnault, Joe Farrell, Helene Fearon, Jay Irrgang, Aimee Klein, Stephen McDavitt, Ken Olson, Bill O'Grady, Richard Smith, Debbie Todd</i></p>	<p>FINANCE Chair: Joe Godges, DPT, MA, OCS (See Treasurer)</p> <p><i>Members: John Childs, Steve Clark, Tara Jo Manal</i></p>
<p>AWARDS Chair: Thomas G. McPoil, Jr, PT, PhD, ATC (See Vice President)</p> <p><i>Members: Gary Hunt, Susan Appling, Carl DeRosa, Dale Schuit</i></p>	<p>JOSPT Editor-in-Chief: Guy Simoneau, PT, PhD, ATC Marquette University P.O. Box 1881 Milwaukee, WI 53201-1881 (414) 288-3380 (Office) (414) 288-5987 (FAX) guy.simoneau@marquette.edu</p> <p>Executive Director/Publisher: Edith Holmes edithholmes@jospt.org</p>	<p>NOMINATIONS Chair: Pamela Duffy, PT, MED, OCS, RP 2833 J Ave Adel, IA 50003 (515) 299-5859 duffypam@aol.com</p> <p><i>Members: Kyndall Boyle, Paul Howard</i></p>	<p>Orthopaedic Section Web site: www.orthopt.org</p> <p>Bulletin Board feature also included.</p> 
<p>SPECIAL INTEREST GROUPS</p> <p>OCCUPATIONAL HEALTH SIG <i>Margot M. Miller, PT - President</i></p> <p>FOOT AND ANKLE SIG <i>Stephen G. Paulseth, PT, MS, SCS - President</i></p> <p>PERFORMING ARTS SIG <i>Susan Clinton, PT, MHS - President</i></p>	<p>PAIN MANAGEMENT SIG <i>Joe Kleinkort, PT, MA, PhD, CIE - President</i></p> <p>ANIMAL PT SIG <i>Annie Lamoreaux-Hesbach, PT - President</i></p>	<p>APTA BOARD LIAISON Stephen Levine, PT, DPT, MSHA stevelevine@apta.org</p> <p>2005 HOUSE OF DELEGATES REPRESENTATIVE Bob Rowe, PT, DMT, MHS, FAAOMPT</p>	

officepersonnel

Terri DeFlorian, Executive Director..... x204 tdeflorian@orthopt.org
 Tara Fredrickson, Executive Associate..... x203 tfred@orthopt.org
 Sharon Klinski, Managing Editor J/N x202 sklinski@orthopt.org

Kathy Olson, Managing Editor ISC x213 kmolson@orthopt.org
 Carol Denison, ISC Processor/Receptionist... x215 cdenison@orthopt.org

Licensure: The Privilege to Serve and the Duty to Uphold



Can you remember that day? The day when you sat for the licensure exam? How about the day you found out you passed the exam? Each of these events represents the culmination of goals achieved and the blossoming of a unique career in physical therapy.

There is just something about licensure. By definition professional licensing is designed to protect the health, safety, and welfare of the public from fraudulent and unethical practitioners. However, I think it means so much more to the licensee. Licensure defines and sets you apart as a 'type' of professional. Not just in the field of PT but also other professions as well. The title implies the meeting of some standard or rigor, and ultimately, some type of enforcement or overseer.

On my way to CSM in San Diego last month, I thought about how dependent I was on other professionals who also had to be accountable to a standard through various types of training, certifications, and licensure. The auto mechanic who tuned my car up so I can safely drive to the airport, the security screeners who check baggage and passengers. The aviation mechanic who made sure the plane was well-maintained, the pilots and air traffic controllers who navigated us to the destination. Finally, even the taxi cab driver had to have passed some certification or regulation to be eligible to transport me to the hotel.

It is truly amazing how much blind faith we put into the hands of each one of these individuals. Those who we assume have passed a test, completed a standard, and their overseers who we assume are enforcing the standard.

Everything is fine as long as the standard is met. However, the standard is only as good as the people who hold it and the con-

sumer's perception of what that profession brings to the circumstance. How we view a profession is based on our experience with members within that profession. An opinion will be formed from a first impression or a repeated impression...good or bad. This is no different for physical therapists. There is a professional responsibility to police ourselves and report those who do not meet even the minimal standard of licensure. In many states, the ethical standards are explicitly included in the practice act and enforced by the state board, so that a violation of the APTA code of ethics is also a violation of the practice act. More states are doing this, although currently my state (Pennsylvania) has not. The trend is for legal and ethical to be more closely intertwined.

I wonder how the consumer views physical therapy as a field and the physical therapist as a professional. I still feel that there is some confusion among consumers as to what it takes to become a physical therapist and the public's understanding of licensure. I still get patients who often ask about the training. Some individuals think it is comparable to a massage therapist. Others inquire about differences between a physical therapist assistant and a physical therapist while others aren't sure about the distinction between an occupational therapist and a physical therapist. Many ask because their sons or daughters are interested. I cringe every time I recall the episode on Seinfeld where Elaine and George go to see a physical therapist. The skit was not very flattering toward our profession. Such portrayals originate from somewhere. Are we each doing our part to accurately reflect our training and expertise to promote a professional presence to the consumer? One needs only to talk to a few patients who recall that the other clinic they

attended just "stuck me in a room and had me do my exercises on my own." Blatant inconsistencies among clinicians in different clinics are still apparent even with guidelines to eliminate unwanted variations in practice being advocated through association initiatives (ie, *The Guide to Physical Therapist Practice*). This inconsistency is the biggest threat to the attainment of an evidence-based standard of practice. What is a consumer to think when such diverse practice approaches exist even though their diagnosis remains the same? I know how I would feel if I were the patient...confused and not very confident in the profession. Such acts of inconsistencies are usually found in 'unlicensed' professions fraught with scam artists and unethical individuals trying to make a quick buck and who have no pride in their work.

Once again physical therapy has one of the hottest job outlooks.¹ Employment opportunities are increasing and it looks like the pendulum is swinging back in our favor. However, with opportunity comes responsibility. The responsibility to not only meet the minimum standard through licensure but also perform our professional duties to strive for increased competence to fully serve the public and *exceed* the standard.

The fact that license renewal requirements vary among states is perplexing. For example, in Pennsylvania there is no requirement for continuing education or parameters for continued competence. In other words, once a therapist always a therapist in Pennsylvania as long as you pay the renewal fee of \$37 every 2 years and don't violate the regulations within the practice act. Even if you are no longer engaged in practice, you can easily maintain your license through renewal. This is a little disconcerting to me. If licensure is a way to identify a standard, why isn't there a continued assessment of the standard in terms of competence? I

know that developing standards of continued competence can be a difficult task. Until we are able to solve the issue of competence, the responsibility falls completely on the licensee and whatever standards the employer requires of their staff.

Inevitably, the issue then becomes one of professionalism or how much you value your license and professional obligation. What is professionalism? Readers may find APTA's document on Self-Assessment on Professionalism a good resource to see if you are being true to the license and the profession-

alism it demands.² Those who do not value and respect the license will never reflect the essence of a professional. Every licensed physical therapist has a responsibility to uphold the credential in a respectful manner. It is only through the efforts of the 'collective whole' that there will be an advancement of not only the profession and the professional but also the real reason for all the fuss in the first place—for the betterment of the patient. Are you proud to call yourself a physical therapist?

REFERENCES

1. US Department of Labor Bureau of Statistics: Available at: www.bls.gov/oco/ocos080.htm. Accessed on March 1, 2006.
2. APTA Document on Self-Assessment on Professionalism. Available at: www.apta.org/AM/Template.cfm?Template=/CM/HTMLDisplay.cfm&ContentID=28802. Accessed on March 1, 2006.

president's message

Michael T. Cibulka, PT, DPT, MHS, OCS
President, Orthopaedic Section, APTA, Inc.

Post Combined Sections Meeting

It seems like I am always telling you I just got back from somewhere. Physical therapists are a peripatetic subgroup of people. Well I won't tell you the weather was wonderful in San Diego, it is always wonderful there! The bad part is that I was in meetings most of the time and could not enjoy all that San Diego has to offer. The good news is that during CSM we had a plethora of great educational programming, posters, platforms, and meetings. Where do I begin? Perhaps the best place to start is with membership. The Orthopaedic Section now has 15,296 members, our largest total ever. Adam Smith has been aggressive lately in marketing to new students the importance and advantages of membership through many new initiative programs. Keep up the good work Adam!



We have one new change on the Orthopaedic Section's Board of Directors (BOD), Kelly Fitzgerald who has served out his term as Chair of the Research Committee, is stepping down and Lori Michener will be taking over as Chair. I want to personally thank Kelly for all that he has done over the years. Anyone who has been to CSM and attended

any of the Orthopaedic platform or poster presentations has witnessed Kelly and his Committee's hard work. Not only does the Research Committee review abstracts for CSM, they also award grants as 'seed' money to both young and seasoned orthopaedic researchers. Although these grants are primarily geared for young researchers, all who apply are considered. They also select the Rose Excellence in Research Award recipient. As part of the Orthopaedic Section BOD, Kelly attends all monthly teleconference meetings and face-to-face BOD meetings. Having a research point of view on the board is important when looking at the big picture and direction of the Orthopaedic Section. We wish Kelly well in his next endeavors and welcome Lori to the Board. Also, joining the Research Committee is Linda Van Dillen, PT, PhD. Linda comes from Washington University in St. Louis, MO where she serves as Assistant Professor in the Program of Physical Therapy.

We also have 2 outgoing Special Interest Group (SIG) Presidents that have ended their terms. All have served their SIG well and by making their SIG stronger and viable

they have made the Orthopaedic Section a stronger Section. The first is Deborah Lechner of the Occupational Health SIG, and secondly is Deborah Gross Saunders of the Animal PT SIG. Incoming SIG Presidents include Margot Miller for the Occupational Health SIG and Amy Hesbach for the Animal PT SIG.

This year's CSM was a great success with over 6,000 therapists attending. All of the Orthopaedic Section's meetings appeared to be filled to capacity or near capacity. The weather as I already said was great, the food was super. Unfortunately, it was at this meeting that I learned of the passing of Florence Kendall, PT. The sad news of losing Florence resonated throughout the meeting. Florence was a matriarch to the PT family. She was always ebullient, always smiling, always engaging with passion and energy. No matter whether you were young or old, male or female, an orthopaedic PT or geriatric PT, she would reach out to you. At CSM all therapists in attendance mourned the passing of Florence. Shirley Sahrman, PT, PhD gave the opening ceremonies address. Coincidentally, the bond between Shirley and Florence, which was forged by a singular love of our profession, gave Shirley the perspicacity to vividly describe Florence's wonderful

life to the recently certified specialists and guests. Although Shirley's main address was thoughtful and provoking, her prologue in which she described Florence and the way she lived was the message that delivered through the ears and hearts of the collected audience. Later in the week, Jules Rothstein, PT, PhD, Editor Emeritus of *Physical Therapy*, was eulogized first by his family and then by his friends. Touching stories of the irascible Jules were given that reminded me of my first teaching job as an assistant in Jules' Measurement Theory class at Washington University. Yes Jules was irascible; he could also be dictatorial and difficult at times, no doubt about it, but I know of few who cared so deeply for our profession as much as Jules (and Florence). May they both rest in peace.

Getting on with business, the Orthopaedic Section continues to improve on its already sound financial base. So far we have \$1.2 million in savings, with \$477,993 in our Research Endowment Fund and \$738,708 in our general fund. Our Research Endowment Fund has been set up so that we don't have to dig into our day to day income when trying to help fund worthy orthopaedic research projects. We plan on letting this fund grow and then later only use the interest to help support orthopaedic research projects. The process of building up a foundation will take some time but we believe in the long run this will be fruitful and satisfying. We don't know how long the income from our Independent Study Courses will continue generating funds at the current level so creating a long-term saving/endowed mechanism appears a wise use of the Section's money. Income from *Orthopaedic Physical Therapy Practice* increased to \$42,595 and our income from our Independent Study Courses totaled \$411,048. More details of the Section's financial records can be found in our Treasurer's Report.

At CSM last year in New Orleans, we brainstormed before our Board Meeting and came up with a new project that we all are excited about. The new project plan is to use the International Classification of Function (ICF) developed by the World Health Organization to develop Musculoskeletal Guidelines for the body's different regions. We believe this project will not only help guide orthopaedic physical therapy practice, but also find the 'holes' or areas where orthopaedic research is needed, help therapists with


reimbursement, and also provide groundwork for future education. We will keep you updated as we progress with this project. The 2 Board members leading the project are Jay Irrgang, PT, PhD, ATC and Joe Godges, PT, DPT, OCS.

As discussed previously, we continue to receive a steady stream of income from our Independent Study Courses. A few years ago we had a drop in income and I am happy to say that we are again moving in a positive direction. Future ISC offerings include a Diagnostic Imaging Course for physical therapists in late 2006, and Reimbursement Strategies for Physical Therapists; Vestibular Rehabilitation, Dizziness, Balance & Associated Issues in Physical Therapy; Basic Science for Canine Physical Therapy; and Basic Science for Equine Physical Therapy planned for 2007. Mary Ann Wilmarth, our ISC Editor, has done a wonderful job and we will be sad to see her leave when her term expires in 2007. This leads me to ask

if anyone is interested in becoming Editor of the Orthopaedic Section ISC. If you or someone you know is interested in this position, please contact Terri DeFlorian at the Section office.

Finally, I want to again thank all of you who are involved with the Orthopaedic Section as members, committee members, SIG members, or officers. The Section could not progress without your support. As I begin my final year as President, I think back on the last 5 years and realize how far I have come as a person. This job has given me many unique opportunities. I remember starting out and watching from the back row of Orthopaedic Section Business Meetings and how they were run and wondering if I could ever do that. It has been a fascinating ride; one similar to a roller coaster that has its ups and its downs, which is just part of life. During my last year as Orthopaedic Section President, if you have any new ideas, new thoughts, new innovations, please let me know.


Mark Your Calendars & Plan to Attend
Physical Therapy: AC & Exposition • June 21-25, Orlando, FL
CSM 2007 • February 14-18, Boston, MA


Orthopaedic Physical Therapy Residency
Madison, Wisconsin
12 month, full time position
salary & benefits

- Patient centered learning approach.
- 1:1 mentoring with clinical faculty.
- Emphasis on examination, clinical reasoning, & manual therapy skills.
- Critical analysis of practice procedures and scientific literature.

Strive toward excellence

For information contact:
Kathryn Lyons, MS, PT, OCS, Program Director
kml.lyons@hosp.wisc.edu (608) 265-8371


American Physical Therapy Association
Credentialed Postprofessional Clinical Residency Program

Temporomandibular Joint and Anterior Disk Displacement

Snigdha Bijjiga-Haff, BA, MPT

INTRODUCTION

The most continuously used pair of joints within the body are the temporomandibular joints (TMJs). The joints are used during mastication, swallowing, and speaking. The TMJ is distinctive because its function is related to dentition and the contact of the tooth surface. Therefore the TMJ joint cannot be assessed in isolation from the other neighboring structures. With this understanding as a physical therapist, it is important to assess the function and dysfunction of the TMJ in relation to the cranium, jaw, and cervical spine.

ANATOMY

The TMJs are part of the masticatory system, but it is also referred to as the stomatognathic system which is composed of all the structure and tissues related to the joint. This system has several parts: the bones of the skull, mandible, maxilla, hyoid, clavicle, sternum, shoulder girdle, and cervical vertebrae; TMJ and dentoalveolar joints with teeth; cervical spine; vascular area, lymphatic and nervous system; muscle and soft tissue of the head and neck and muscles of the cheeks, lips, and tongue.

The largest and the strongest bone of the face is the mandible. It has a body, which is the horizontal portion. The body accommodates lower teeth and 2 perpendicular portions called the rami. Each ramus has 2 processes—the coronoid and the condylar process. The temporalis and masseter muscles insert in the coronoid process. The condylar process is made up of the neck and the condyle. The condyle is convex and it articulates with the disk, which forms the inferior aspect of the TMJ. The superior aspect of the TMJ is the squamous portion of the temporal bone; it is divided into 4 descriptive parts: articular tubercle, articular eminence, mandibular fossa, and posterior glenoid spine. At C3 level, the suprahyoid and infrahyoid muscles insert at the hyoid bone. The greater wings of the sphenoid bone join into the pterygoid plates which attach the medial and lateral pterygoid muscles. Osteokinematically, the mandible has 3 primary motions: depression, protrusion, and lateral excursion.

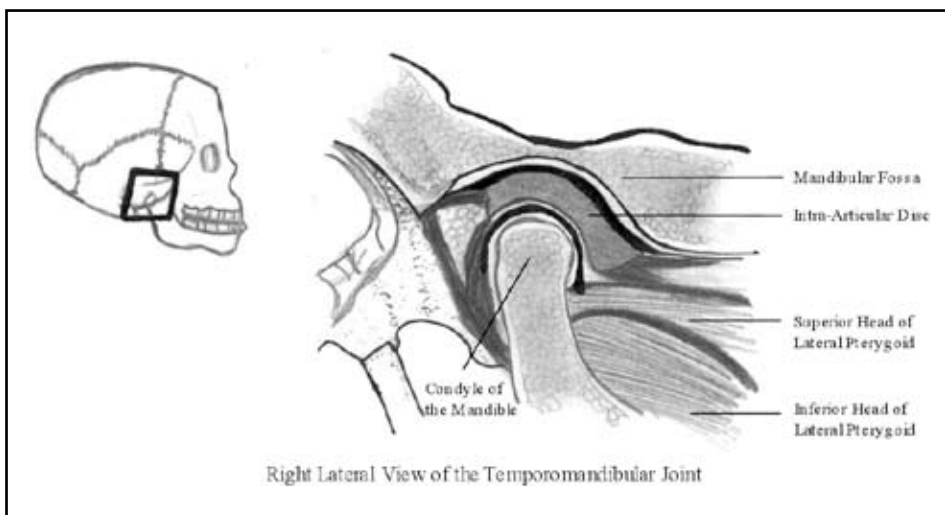
On the either side of the jaw, the TMJ is a synovial condyloid joint covered with collagen fibrocartilage and therefore has the ability to repair and to remodel.² In contrast,

the articular disk of the TMJ is made up of pliable collagen fibrocartilage, which can not be repaired or remodeled. The joint is divided into 2 cavities, an upper and lower cavity by a biconcave disk. The convex surface of the condylar head is used during the opening and closing of the TMJ and moves across the convex surface that is on the articular eminence. The gliding motion of the joint is in the upper aspect of the cavity while the rotation motion, or also known as the hinge motion, occurs in the lower aspect of the cavity. It is imperative that this movement occur in order for proper opening and closing of the joint to continue.

The TMJ has loose fibrous capsule that attaches to the disk anteriorly and posteriorly. Since there is no medial or lateral attachment, the disk can translate anteriorly within the capsule; however, the disk is attached to the posterior ligament at the posterior border at the neck of the mandible. These are both at the posterior portion of the TMJ and the bilaminar zone. Both of these are located at the posterior portion of the TMJ and the bilaminar zone.²⁻⁵

The mediodisco ligament, or otherwise known as Tanaka's ligament, is the strongest ligament attachment and is located on the medial aspect. On the anterior portion there is no capsule located on the medial half and this allows for increased translation of the condyle, therefore leading to a majority of the pathology.⁶ With this known, it is not difficult to understand why the TMJ will actively displace in an anterior and lateral direction.²

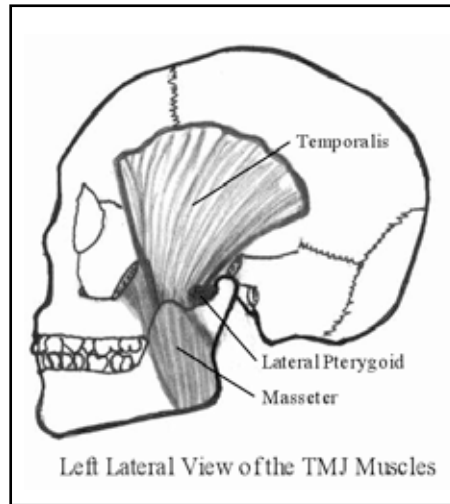
When the TMJ is in the loose packed or rest position, the mouth is noted to be slightly open resulting in the teeth being just shy from touching one another. When the TMJ is in this rest position, the anterior tongue is in contact with the hard palate of the mouth, which is known as the postural position.^{7,8} It is important to educate the



patient of this functional rest position where the tongue is up, the teeth are not touching, and the lips are closed. Another important concept is that there are 2 closed packed positions. These occur when the condyle is in the maximal anterior position with maximal opening and retrusion. The ligaments are then taut and the condyle is unable to further go back. In this position the mouth is closed and the teeth are tightly clenched. The two positions are bilateral and unilateral capsular restriction.

The normal range of mandibular opening is 40 to 50mm. The most functional range of motion (ROM) requirement for most jaw activities is 40mm. This motion consists of 25mm of rotation between the mandibular condyle and the inferior surface of the disk. The last 15mm consists of anterior translation between the superior surface of the disk and the temporal bone.

There are 5 main muscles that contribute to the motion of the TMJ: temporalis, masseter, medial pterygoid, lateral pterygoid, and digastric. These muscles connect the cranium to the mandible along with the buccinator and superior pharyngeal constrictor.¹⁰ Of the 5 main muscles, there are actually 3 that elevate the mandible, and they are the temporalis, the masseter, and the medial pterygoid. The temporalis muscle fibers are used particularly for positioning of the condyle at the end of closure.⁵ The masseter consists of the deep and superficial fibers. The superficial fibers protract the jaw while



the deep fibers retract the jaw. The medial pterygoid has the same function as the masseter, but it is less powerful. The digastric is the primary muscle responsible for mandibular depression.^{2,11} During forced opening of the mandible the lower portion of the lateral pterygoid and the other suprahyoids are active. The hyoid bone is fixed by the infrahyoid muscle group. The lateral pterygoid is the stabilizer of the TMJ; it inserts into the mandibular condyle and articular disk. Its inferior fibers are active with mandibular depressors during opening and protraction. Its superior fibers are active with the elevator muscles during closing. Their role is to decelerate and prevent invagination of the joint capsule during closure.⁵ The superior and inferior fibers of the pterygoid are attached medially, therefore allowing them to pull the

condyle and disk in a medial direction. Suprahyoid and infrahyoid muscles also help with the positioning of the jaw and mandibular depression, but they are most helpful in tongue mobility, manipulating food, swallowing, and speech.¹⁰

The tongue consists of various intrinsic and extrinsic muscles. The primary muscle responsible for positioning of the tongue in the oral cavity is the genioglossus.⁴ The resting position of the tongue provides the mandibular elevators (ie, temporalis, masseter, and medial pterygoid) their resting tone.^{4,12-16}

The TMJ's tissues are innervated by the mandibular division of cranial nerve V. The posterior deep temporal and masseteric nerves supply the medial and anterior regions of the joint and the auriculotemporal nerve supplies the posterior and lateral regions of the joint. The external carotid artery provides the blood supply to the TMJ, masticatory muscles, and surrounding tissue. The internal maxillary artery and its branches supply the maxilla and mandible, the teeth, and the muscles of mastication.

Disk Derangement and the TMJ

There are several common diagnoses for TMJ disorders. The focus of this paper however is on the derangement of the disk. When discussing this particular disorder of the TMJ, it is important to recognize that there are 2 classifications, the anteriorly displaced disk that reduces in joint translation

Actions of the Muscles on the Mandible

Muscle	Elevation of the Mandible	Depression of the Mandible	Protrusion	Retrusion	Lateral Excursion
Digastric	No	Yes	No	No	No
Masseter	Yes	No	Yes (superficial fibers)	Yes (inferior fibers)	Yes **(ILE)
Medial Pterygoid	Yes	No	Yes	No	Yes *(CLE)
Superior head of the Lateral Pterygoid	Stabilizes the position of the articular disk	No	Yes	No	Yes *(CLE)
Inferior head of the Lateral Pterygoid	No	Yes	Yes	No	Yes *(CLE)
Temporalis	Yes	No	No	Yes (posterior fibers)	Yes **(ILE)
Supra and Infra hyoid	No	Yes	No	Yes	No

*(CLE)- Contralateral Excursion; **(ILE)- Ipsilateral Excursion

and the displaced anterior disk, which does not reduce during the translation motion.¹⁷ One of the main characteristic complaints of the patient with disk derangement is clicking or other joint sounds. If the click occurs during opening it is thought to be derived from the anterior displacement of the disk when the condyle is forced in to a posterior and superior displacement. During the opening of the mandible the condyle should pass over the posterior band of the disk, this allows for it to naturally fall into its regular position onto the concave articular surface, which is below the disk.¹⁸ If the clicking occurs during closing, this is due to the condyle moving into a position behind the posterior edge of the disk. In this position, the disk is located in an improper anterior and medial location. The clicking sound that is exhibited from this condition is due to the disk snapping back into a normal position. It is important to note that while opening clicks are due to the disk being forced back into its normal position the closing click is due to the disk being forced into its displaced position. This symptom of clicking can worsen over time due to the posterior ligament becoming increasingly stretched and damaged.

STUDIES

The results of a study by Martini were based on a set of criteria for successful treatment. The treatments included: normal range of mandibular movements, absence of pain, stable results with night-wearing appliances, and repositioning of the disk back onto the condyle as shown on an MRI scan. The study determined that the success rate of using mandibular manipulative technique for disk displacement was 'very high.' There were approximately 1,500 patients included in the study and of these only 5 of the cases had to be further subjected to surgical intervention. The study was quick to point out that manipulation should only be performed by an adequately trained individual,

emphasizing that it would take around 1 to 2 months of training for sufficient clinical skill. The study further demonstrated that imaging performed at around 2 months' post-therapeutic manipulation and disk repositioning verified results to be stable. To assure positive results, the patients were merely asked to wear stabilizing splints. It was further pointed out that cases, where locking had been ongoing for greater than 2 years, were successfully treated.¹⁹

In the study of Stiesch-Scholz the aim was to determine the therapeutic value of medical and physical therapy without the use of splints for temporomandibular joint disk displacement. The success of treatment was determined by evaluating the maximal mouth opening measurement as well as by asking the patient to subjectively rate the symptoms that he/she was experiencing using a validated questionnaire and a visual analog scale. The same criteria was found throughout other literature and allowed for easier comparisons. On an average most patients had the ability to open their mouth around 33mm prior to therapy. Following treatment repeated measurements revealed that it increased to 44mm. The Wilcoxon Test ($p = 0.000$) showed this to be statistically a significant increase in the group that only used the splint therapy, while the medically treated patients had the greatest measurement increase with 14.5mm. This was statistically significant using the Kruskal-Wallis test ($p < 0.05$). The physical therapy group also improved, albeit to a lesser extent, following an observable increase of 7.3mm for patients who received PT used splint therapy. Unique to this study unlike the previously cited Martini study, the data analysis showed statistically significant negative correlation with regards to time of symptoms and the degree of improvement with mandibular movement. Seventy-four percent of the patients stated that symptoms of pain disappeared, and 18% had reduction, leav-

ing only 8% with no changes. In the end the physical therapy group had slightly lower numbers, with 43% being symptom free, 29% having decreased symptoms, and 28% stated no change.²⁰

Another study by Stiesch-Scholz evaluated 55 patients using only splint therapy without reduction. In this study it was noted that patient compliance was acceptable and there was good patient follow through with treatment. The inclusion criteria were as follows: "persistent marked limited mouth opening with history of sudden onset, history of the temporomandibular joint clicking in the affected joint that ceased with the locking, straight line deflection to the affected side of the mouth opening, impaired lateral movements towards the contralateral side, TMJ pain often related to patient's attempts at mouth opening and chewing, pain with palpation of the affected joint, evidence of condyle movement restriction on the affected side was during mouth opening assessed by palpation and radiology." Prior to the study it was determined that the patients had to have 5 of the 7 criteria to be admitted into the study. The study spanned a period of 45 to 50 months. Patients were put into groups with regards to acute, subacute, or chronic complaints. The overall effect was that 72.7% were pain free, 20% had improved, while 7.3% stated no change. A paired t-test revealed that the improvement was significant for increase in mandibular range of motion. The greatest improvements were noted in the acute group, which were patients who had symptoms for less than 3 months. The results were found to be statistically significant using an ANOVA ($p < 0.05$).²¹

In the study conducted by Yuasa, TMJ disk displacement was treated with NSAIDs and mouth opening exercises. The 60 patients selected for the study were put into 4 categories starting from those with no dysfunction to those with severe dysfunction.

Occurrence of Symptoms With and Without Reduction

Symptoms	With Reduction	Without Reduction
Clicking	Yes	Yes (history of clicking that resolves over time)
Locking	No	Yes
Decrease Range of Motion	No	Yes
Pain	Yes	Yes

To be included in this study patients had to have greater than 2 weeks of unilateral moderate to severe dysfunction and an MRI scan demonstrating the disk displacement. Patients were treated for up to 4 weeks with oral once a day ampiroxicam 27mg and exercises 4 times per day. The exercises included a mouth opening exercise using a lateral and anterior movement. By 2 weeks no difference was noted between the treated and the nontreated groups. However, by the fourth week it was demonstrated that 60% of those treated experienced improvement versus only 33% of those receiving no treatment having improvement. The study determined the intervention to be significant by the Mann-Whitney U test.²²

The study by Becker evaluated the effects of an anterior bite stop on the activity of the muscles of mastication. Thirty volunteers were enrolled in this study with no temporomandibular joint disorder being determined in the patients. This study demonstrated that the anterior bite stop did indeed diminish the activity in the temporalis anterior, temporalis posterior, and the masseter during both clenching and grinding. Though no change was noted in the digastric anterior muscle, the study noted that this was likely due to the digastric anterior muscle, which is used in jaw opening. While this study did not attempt to determine if this did have an effect on patient symptoms, other studies have demonstrated that EMG activity does correlate with patient symptoms.²³

Segami studied mandibular manipulation technique with effects on the internal derangement of the temporomandibular joint. This study was composed of 28 patients ranging from 14 to 57 years of age with histories of locking duration from 2 days to 24 months. The patients reported moderate to severe pain with opening the TMJ as well as mastication. This study not-

ed that all patients either had no symptoms or diminished symptoms upon finalization of treatment. It was also noted that disk mobility also improved in all the studied joints. It is to be noted that there was a strong correlation between age and outcome with there being a more positive response in the younger patients who had a shorter duration of locking problems.²⁴

In the case report by Levandoski non-surgical management of TMJ disorders were evaluated by MRI scans. In this case a prosthesis for mandibular stabilization was constructed and encouraged to be worn by the patient. When biting the device it effectively aligned the condyles, providing stabilization and support. The patient was instructed to wear the device at all times except for when cleaning his/her teeth. An MRI scan revealed that the device had indeed rearticulated the condyle bilaterally. There was also reported improvement in symptoms and range of motion.²⁵

William evaluated the treatment of temporomandibular joint internal derangement with physical therapy. Patients were classified into 5 groups with attention given to the degree of clicking that occurred in jaw opening. There were a total of 68 patients accepted into the study. The therapy that was used included manual joint distraction, disc or condyle mobilization, exercise therapy to the TMJ, and exercise to other cervical and thoracic regions. Therapeutic modalities of ultrasound, phonophoresis, TENS, high-voltage galvanic stimulation, ice, moist heat, massage, and joint rest were also used in pain control. The patients were evaluated at the end of the study using a subjective pain scale, elimination of clicks, and improved range of motion. Treatment was administered once to twice per week, ranging from 3 to 6 weeks. Physical therapy was noted to reduce the symptoms of pain in patients

with clicking occurring during jaw opening in the range of 0 to 30mm. Eighty-seven percent of the patients treated in this group had improvements. Though in patients with clicking during jaw opening from 30mm to the end of jaw opening or with mediolateral mandibular excursion or with locking, however, there was no improvement. Upon surgical correction it was also noted that these patients had thickened posterior bands or had thickened, calloused, or hyalinized areas on the inferior surface of the disc. The information obtained from surgery led the observers to believe that long standing untreated disc displacement may cause irreversible degenerative changes. The researchers of this study concluded that, while physical therapy may not always improve internal derangement of the TMJ, it is worthwhile to try this approach prior to surgical intervention.²⁶

CONCLUSION

It has been well documented through literature that physical therapy, splint, and manipulation have had a positive effect on an anteriorly displaced disk. Past studies yield evidence of having shown varying degrees of functional improvements. The patients' improvement benefits have been inversely proportional to the time of the derangement. Studies demonstrate that a patients' specific treatment is an important factor in the outcome of this disorder.

Treatment modalities, provided by a physical therapist, such as heat, ice, e-stem, and ultrasound are found to be effective in decreasing pain and muscle guarding. Soft tissue mobilization techniques such as massage and myofascial release can be used to decrease pain, and increase extensibility of the tissues. Joint mobilization techniques of distraction translation can be helpful in decreasing pain and increasing range of motion. Also effective are home programs, set

Physical Therapy Interventions

Treatment	Outcomes
Modalities	Decreasing pain and muscle guarding
Soft tissue mobilization techniques	Decrease pain and increase extensibility of the tissues
Joint mobilization techniques	Decreasing pain and increasing range of motion
Patient education	Decreasing parafunctional activities and improve proper breathing technique

up by a physical therapist, which can be helpful in decreasing parafunctional activities such as chewing gum, biting nails, and excessive opening or clenching of the jaw. Patient education can help the patient use self-cueing techniques such as checking on the position of the tongue, which should be resting against the hard palate and mandible during the day. Another useful intervention that can be taught by the therapist is proper breathing technique (especially diaphragmatic breathing), which relaxes the muscles, strengthens the diaphragm, and decreases the overall stress a patient may be under. Educating the patient to maintain tongue up, teeth apart, and lips closed (TUTALC) aids the patient in obtaining a resting position of the jaw, tongue, and muscles, especially if they are clenching. Physical therapists can also help set up exercise programs in which patient's are instructed to perform active-passive mandibular exercise, neuromuscular re-education, and self distraction. As the literature studies have proven, there are many noninvasive interventions, which can be provided by a physical therapist that are effective in achieving positive outcomes for this derangement, and therefore need to be used as we proceed in treating this condition.

REFERENCES

1. Magee DJ. Temporomandibular joints. In: Magee DJ, ed. *Orthopedic Physical Assessment*. 2nd ed. Philadelphia, Pa: WB Saunders; 1992:71-89.
2. Norkin CC, Levangie PK. The temporomandibular joint. In: Norkin CC, Levangie PK, eds. *Joint Structure and Function: A Comprehensive Analysis*. 2nd ed. Philadelphia, Pa: FA Davis; 1992:193-206.
3. Moss M. The functional matrix concept and its relationship to temporomandibular joint dysfunction and treatment. *Dent Clin North Am*. 1983;27:445-455.
4. Kraus S. Physical therapy management of TMD. In: Kraus S, ed. *Temporomandibular Disorders*. 2nd ed. New York, NY: Churchill Livingstone; 1994:161-216.
5. Eggleton TM, Langton DP. Clinical anatomy of the TMJ complex. In: Kraus SL, ed. *Temporomandibular Disorders*. 2nd ed. New York, NY: Churchill Livingstone; 1994:1-40.
6. Hartley A. Temporomandibular assess-

- ment. In: Hartley A, ed. *Practical Joint Assessment: Upper Quadrant*. 2nd ed. St. Louis, MO: Mosby; 1995:1-41.
7. Fish F. The functional anatomy of the rest position of the mandible. *Dent Pract*. 1961;11:178.
8. Sauerland EK, Mitchell SP. Electromyographic activity of intrinsic and extrinsic muscles of the human tongue. *Tex Rep Bio Med*. 1997;33:445-455.
9. Pertes RA, Attanasio R, Cinotti WR, Balbo M. The Temporomandibular joint in function and dysfunction. *Clin Prev Dent*. 1988;10:23-29.
10. Assael LA. Functional anatomy. In: Kaplan AS, Assael LA, eds. *Temporomandibular Disorders: Diagnosis and Treatment*. Philadelphia, Pa: WB Saunders; 1991:2-10.
11. Bell WE. *Temporomandibular Disorders: Classification, Diagnosis, Management*. 3rd ed. Chicago, Ill: Year Book Medical Publishers; 1990.
12. Dunn J. Physical therapy. In: Kaplan AS, Assael LA, eds. *Temporomandibular Disorders*. Philadelphia, Pa: WB Saunders. 1991:455-500.
13. Friction JR, Kroening RJ, Hathaway KM. *TMJ and Craniofacial Pain: Diagnosis and Management*. St. Louis, MO: Ishiyaku EuroAmerica; 1988.
14. Funt LA, Stark B, Gelb S. Myofunctional therapy in the treatment of the craniomandibular syndrome. In: Gelb H, ed. *Clinical Management of Head, Neck, and TMJ Pain and Dysfunction: A Multi-Disciplinary Approach to Diagnosis and Treatment*. 2nd ed. Philadelphia, Pa: WB Saunders; 1985: 432-470.
15. Racabado M, Iglarsh ZA. *Musculoskeletal Approach to Maxillofacial Pain*. Philadelphia, Pa: JB Lippincott; 1991.
16. Moumoto T, Kawamura Y. Properties of tongue and jaw movements elicited by stimulation of the orbital gyrus of cat. *Arch Oral Biol*. 1973;18:361-372.
17. Farrarw, McCarty W Jr. *Outline of Temporomandibular Joint Diagnosis and Treatment*. 6th ed. Montgomery, AL: Normandy Study Group; 1980.
18. Shore MA. *Temporomandibular Joint Dysfunction and Occlusal Equilibration*. Philadelphia, Pa: JB Lippincott; 1976.
19. Martin G, Martin M, Carano A. MRI Study of a Physiotherapeutic Protocol

- in Anterior Disk Displacement without Reduction. *J Cranio Pract*. 1996; July 14(3):216-224.
20. Stiesch-Scholz M, Fink M, Tschernitschek H, Robbach A. Medical and Physical Therapy of Temporomandibular joint disk displacement without reduction. *Cranio*. 2002;20:85-90.
21. Stiesch-Scholz M, Tschernitschek H, Rossbach A. Early begin of splint therapy improves treatment outcome in patients with temporomandibular joint disk displacement without reduction. *Clin Oral Investig*. 2002;6:119-123.
22. Yuasa H, Kurita K. Randomized clinical trial of primary treatment for temporomandibular joint disk displacement without reduction and without osseous changes: A combination of NSAIDs and mouth-opening exercise versus no treatment. *Oral Surg Oral Med Oral Pathol Oral Radio Endo*. 2001;91:671-675.
23. Becker I, Tarantola G, Zambrano J, Spitzer S, Oquendo D. Effect of a prefabricated anterior bite stop on electromyographic activity of masticatory muscles. *J Prosth Dent*. 1999;82:22-26.
24. Segami N, Murakami K, Lizuka T. Arthrographic evaluation of disk position following mandibular manipulation technique for internal derangement with closed lock of the temporomandibular joint. *J Cranio Disord: Facial Oral Pain*. 1990;4:99-108.
25. Levanandoski R. The MRI study as a diagnostic and therapeutic indicator in the non-surgical management of temporomandibular joint disorder: Phase 1 management- A Case Report. *J Cranio Pract*. 1995;13:57-64.
26. Kirk W, Calabrese D. Clinical evaluation of physical therapy in the management of internal derangement of the temporomandibular joint. *J Oral Maxillofac Surg*. 1989;47:113-119.

Snigdha Bijjiga-Haff is a new physical therapy graduate in Kansas City. Her interests during her physical therapy education were geared towards: temporomandibular joint, women's health, lymphedema, and wound care. She believes communication and education among health care providers can significantly improve a patient's successful outcome. She can be reached at snigdha_bh@hotmail.com.

UNIVERSITY OF ST. AUGUSTINE

FOR HEALTH SCIENCES

Manual Therapy and Orthopaedic Seminars 2006 Seminar Calendar

CONTINUING EDUCATION SEMINARS



Stanley V. Paris, PT, PhD, FAPTA
President

Register Online at
www.usa.edu or
Call today at
1-800-241-1027!

S1 - Introduction to Spinal Evaluation & Manipulation
35 Hours, 3.5 CEUs (No Prerequisite)
\$825

St. Augustine, FL Viti/Paris May 3 - 7
Ft. Lauderdale, FL Viti May 31 - Jun 4
Atlanta, GA Smith Jun 8 - 12
Detroit, MI Furto Jun 14 - 18
Indianapolis, IN Viti Jun 14 - 18
Boston, MA Viti Jul 12 - 16
Jackson, MS Furto Jul 26 - 30
St. Petersburg, FL Viti Aug 2 - 6
LaJolla, CA Viti Aug 23 - 27
St. Louis, MO Furto Aug 23 - 27
Baton Rouge, LA Viti Sep 13 - 17
New York, NY Yack Sep 20 - 24
St. Augustine, FL Viti/Paris Oct 4 - 8
Louisville, KY Furto Oct 18 - 22
Baltimore, MD Smith Nov 9 - 13
Fresno, CA Yack Dec 6 - 10

S2 - Advanced Evaluation & Manipulation of Pelvis, Lumbar & Thoracic Spine Including Thrust
21 Hours, 2.1 CEUs (Prerequisite S1)
\$545

Pittsburgh, PA Irwin Apr 28 - 30
Hawaii Irwin Jun 2 - 4
Chicago, IL Yack Jul 21 - 23
St. Augustine, FL Viti Jul 28 - 30
New York, NY Yack Aug 11 - 13
Baltimore, MD Irwin Sep 29 - Oct 1
St. Augustine, FL Viti Sep 29 - Oct 1
Denver, CO Yack Oct 6 - 8
Flint, MI Viti Oct 20 - 22
Ft. Lauderdale, FL Irwin Oct 20 - 22
Las Vegas, NV Yack Nov 3 - 5
Dallas, TX Viti Dec 1 - 3

S3 - Advanced Evaluation & Manipulation of the Cranio Facial, Cervical & Upper Thoracic Spine
27 Hours, 2.7 CEUs (Prerequisite S1)
\$750

St. Augustine, FL Rot/Paris April 6 - 9
Dallas, TX Rot May 4 - 7
Baltimore, MD Smith Jul 13 - 16
Baton Rouge, LA Rot Jul 27 - 30
Boston, MA Smith Sep 14 - 17
St. Augustine, FL Rot/Paris Sep 28 - Oct 1
Chicago, IL Rot Oct 12 - 15
Atlanta, GA Smith Oct 26 - 29
LaJolla, CA Rot Nov 2 - 5
New York, NY Rot Nov 30 - Dec 3
Ft. Lauderdale, FL Smith Dec 14 - 17

E1 - Extremity Evaluation and Manipulation
30 Hours, 3.0 CEUs (No Prerequisite)
\$695

Baltimore, MD Busby Apr 27 - 30
LaJolla, CA Turner Apr 27 - 30
St. Augustine, FL Patla/Busby May 11 - 14
Atlanta, GA Busby Jun 8 - 11
Louisville, KY Fox-Baldwin Jun 15 - 18
Chicago, IL Busby Jun 22 - 25
St. Augustine, FL Fox-Baldwin Aug 10 - 13
Boston, MA Busby Aug 24 - 27
Las Vegas, NV Turner Sep 28 - Oct 1
Flint, MI Fox-Baldwin Oct 5 - 8
St. Petersburg, FL Turner Oct 26 - 29
Cincinnati, OH Fox-Baldwin Nov 9 - 12
Dallas, TX Turner Nov 9 - 12
Milwaukee, WI Fox-Baldwin Nov 30 - Dec 3

MF1 - Myofascial Manipulation
20 Hours, 2.0 CEUs (No Prerequisite)
\$545

Pittsburgh, PA Cantu Jun 23 - 25
St. Augustine, FL Stanborough Jun 23 - 25
Lexington, KY Cantu Jul 14 - 16
Dallas, TX Cantu Aug 4 - 6
Indianapolis, IN Stanborough Aug 18 - 20
Milwaukee, WI Cantu Aug 18 - 20
Ft. Lauderdale, FL Grodin Aug 25 - 27
Atlanta, GA Cantu Sep 15 - 17
St. Louis, MO Stanborough Oct 20 - 22
St. Augustine, FL Cantu Nov 3 - 5
New York, NY Grodin Nov 10 - 12

S4 - Functional Analysis & Management of Lumbo-Pelvic-Hip Complex
15 Hours, 1.5 CEUs (Prerequisite S1)
\$495

St. Augustine, FL Nyberg Apr 29 - 30
New York, NY Nyberg Jun 3 - 4
St. Augustine, FL Varela Jun 17 - 18
Washington, DC Nyberg Jun 24 - 25
Ft. Lauderdale, FL Nyberg Aug 5 - 6
Los Angeles, CA Varela Sep 16 - 17
St. Petersburg, FL Nyberg Oct 7 - 8
St. Augustine, FL Varela Nov 11 - 12
Atlanta, GA Nyberg Dec 2 - 3
Chicago, IL Varela Dec 9 - 10

The Pediatric Client with a Neurological Impairment
29 Hours, 2.9 CEUs (No Prerequisite)
\$625

St. Augustine, FL Decker Sep 14 - 17

Medical Diagnostics
20 Hours, 2.0 CEUs (No Prerequisite)
\$575

Reykjavik, Iceland Boissonault/ Oct 27 - 29
Koopmeiners

The Older Adult with a Neurological Impairment
29 Hours, 2.9 CEUs (No Prerequisite)
\$625

St. Augustine, FL Howell/Lowe Jul 13 - 16

Basic Cranio-Facial
20 Hours, 2.0 CEUs (No Prerequisite)
\$525

*Atlanta, GA Rocabado Aug 14 - 16
New York, NY Rocabado Sep 15 - 17

Intermediate Cranio-Facial
20 Hours, 2.0 CEUs (Prerequisite Basic Cranio Facial available as a Seminar or Online)
\$525

Atlanta, GA Rocabado Aug 17 - 19
*New York, NY Rocabado Sep 18 - 20

*Specifically designed to respect the Sabbath.
Seminar dates, locations, and tuition are subject to change, please call before making any non-refundable reservations.

University of St. Augustine
For Health Sciences
1 University Boulevard
St. Augustine, FL 32086-5783
Registration: 800-241-1027
FAX: 904-826-0085

Name: _____
_____ PT

Address: _____

City: _____

State: _____ Zip: _____

Email: _____

Home: (____) _____ - _____

Work: (____) _____ - _____

FAX: (____) _____ - _____

Please register me for:
Seminars: _____

Locations: _____

Dates: _____

Prerequisite information:
Seminar: _____

Location/Date: _____

Is this your first seminar with the University? Yes _____ No _____

A \$50 non-refundable deposit must accompany registration form. A 50% non-refundable, non-transferable deposit is required for Certification. Balance is due 30 days prior to start date of the seminar. Balance can be transferred or refunded with 2 week written notice. Notice received after that time subject to only 50% refund. No refunds or transfers will be issued after the seminar begins.

METHOD OF PAYMENT

_____ Check or Money Order enclosed

Please make payable to: University of St. Augustine

Charge my:

Card # _____

Exp. date: ____/____/____

Amount: \$ _____

Signature: _____

Team Discount - Two or more persons from the same facility registering for the same seminar at the same time, receive a 10% discount at the time of registration.
(Advanced notice and full payment required, does not apply after the first day of a seminar.)

Multiple Seminar Discount - Register and pay in full for two or more seminars at the same time and receive a 10% discount.
(May not be combined with any other discounts or previous registrations.) Ortho 4-06

Advance Your Opportunities by Investing in Your Education Earn Your Transitional DPT



BSPT to DPT 30 Credits
MPT to DPT 22 Credits

- Convenient Distance Education Format with Online Courses
- Can Earn a Certification and a DPT Degree
- Clinically Relevant

Call 800/241-1027 or Visit our website www.usa.edu

An Analysis to Define the Clinical Practice of Physical Therapy for Performing Artists

Jennifer M. Gamboa, M.P.T., O.C.S., Marshall Hagins, Ph.D., P.T.,
and Tara Jo Manal, M.P.T, O.C.S., S.C.S.

Abstract

The Performing Arts Special Interest Group of the American Physical Therapy Association performed a study to describe the unique knowledge and responsibilities of physical therapists' management of performing artists. This was a survey study using a non-experimental descriptive research design and a sample of convenience. A national advisory group (NAG) of subject matter experts created a list of 144 knowledge (foundational content) and responsibility (skills and abilities) items for inclusion in the survey. The final survey items were rated on frequency, criticality, and level of judgment. The survey was sent to 650 subjects who belonged to one of three major organizations with missions to advance health outcomes in performers. The response rate was 13%. The majority of respondents had between four and ten years of experience treating performing artists. In terms of frequency, almost all responsibility items within the survey occurred at least monthly. In terms of criticality, no item was ranked as low or minimally critical. Based on the generally high scores of all items, the NAG

consensus was to include all items in the final description of specialized practice. The results of this survey study describe the core competencies for the specialized practice of physical therapy for performing artists. These competencies can be used to guide the development of continuing education opportunities, post-professional educational curricula (e.g., residencies or fellowships), future research endeavors, and credentialing efforts in the subspecialty of physical therapy for performing artists.

Dancers, as well as other performing artists, represent a population of highly trained individuals that are at significant risk for injury due to the repetitive, reproducible, and consistent nature of their movement patterns.¹ The annual incidence of injury in professional dancers, for example, is reported to be as high as 67% to 95%.²⁻⁵ Despite the significant risk and rate of injury, performing artists have historically lacked adequate access to appropriate healthcare professionals. How-

ever, there continues to be a growing mainstream interest in medicine for performing artists. This heightened interest in performing arts medicine is reflected in an increasing number of articles appearing in a broader range of peer-reviewed medical journals, the establishment of dance medicine programs at college and university levels, and increased exposure to the healthcare issues of artists in popular media venues. Several professional organizations that focus on the care and training of performing artists now exist.⁶⁻⁹ Many of these organizations are multi-disciplinary, reflecting the diversity of practitioners that care for performing artists. In part, the intent of organizations such as the International Association for Dance Medicine and Science, the Performing Arts Medicine Association, and the Performing Arts Special Interest Group of the Orthopaedic Section of the American Physical Therapy Association, is to educate healthcare professionals, support research, and promote best practices in performing arts medicine.

Despite the growth of organizations that are committed to education and research in the performing arts, there has been little organized effort to identify the unique features of care for performing artists. This is in stark contrast to other specialties within medicine. Sports medicine, for example, currently has well-defined descriptions of the knowledge, skills, and abilities needed by many of its

Jennifer M. Gamboa, M.P.T., O.C.S., Owner/Director, Physical Therapy Services, Body Dynamics, Inc, Arlington, Virginia; Director, Health and Wellness Program, Universal Ballet Academy, Washington, D.C.; Past-president, Performing Arts Special Interest Group, Orthopaedic Section, Inc., American Physical Therapy Association. Marshall Hagins, Ph.D., P.T., Associate Professor, Division of Physical Therapy, Long Island University, Brooklyn, New York, New York; Research Associate and Senior Clinical Instructor, Harkness Center for Dance Injuries, Hospital for Joint Diseases, New York, New York; Owner, Brooklyn Arts Physical Therapy, Brooklyn, New York. Tara Jo Manal, M.P.T, O.C.S., S.C.S., Director, Physical Therapy Clinic, University of Delaware, Newark, Delaware.

Correspondence: Jennifer M. Gamboa, M.P.T., O.C.S., 5130 Wilson Blvd., Suite B-1, Arlington, Virginia 22205.

Table 1 Practice Analysis Project Plan for Physical Therapy for Performing Arts

Task	Timeline
1. Conduct literature and document review	November-December 2000
2. Establish a National Advisory Group (NAG) of subject matter experts	December 2000-January 2001
3. Meet with NAG to draft KSAs for Performing Arts Physical Therapy	March 2001
4. Develop preliminary competencies based on KSAs and review by NAG	May-August 2001
5. Develop draft of survey instrument	September 2001
6. Pilot survey instrument	November 2001
7. Revisions to survey instrument based on pilot data	June-August 2002
8. Administer survey and follow-up	September-October 2002
9. Collection and analysis of data by Psychometric Consultants, Knapp and Associates International, Inc.	November-December 2002
10. Draft competency document and review by NAG	January-March 2003

practitioners (e.g., physicians and physical therapists). Efforts to define the scope of practice by sports medicine practitioners have been organized and consensus driven. The results of such efforts have helped to ensure the future quality and quantity of sports medicine practitioners by providing consistent, focused, and well-defined education within residencies and fellowships.

The Performing Arts Special Interest Group (PASIG) is a subspecialty group within the American Physical Therapy Association (APTA). Members of the PASIG, among others, recognized that a model similar to sports medicine could serve to advance the quality and quantity of performing arts medicine healthcare providers. The PASIG, with significant support from the Orthopaedic Section of APTA, decided to undertake a highly-structured, consensus driven process to develop a Description of Specialized Practice (DSP) that would describe the unique features of physical therapy management of performing artists. The Performing Arts DSP can then be used to design the curricula for residencies or fellowships for physical therapists and assist with focusing programming efforts within arts medicine organizations to reflect the true specificity of what is needed for performing arts care.

This report describes the process and outcomes of a survey study conducted by the PASIG to describe the knowledge, skills, and responsibilities necessary for physical therapy management of the performing artist. The specific purposes of the DSP are to promote consistently high standards of care, provide guidelines for curricular

development for continuing education as well as more formal post-professional educational opportunities, facilitate the establishment of a research agenda to promote evidence-based practice, and act as a template for other performing arts medicine healthcare practitioners to more systematically define their respective scopes of practice.

The authors are aware that the readers of this journal are multidisciplinary and are focused primarily on the management of dancers rather than the broader category of performing artists. However, we believe that the findings of this study have relevance to the multiple disciplines serving dancers and they serve as a model for a consistent, consensus-building approach for defining a common set of standards. Further, although the findings themselves apply to performing artists (e.g., musicians, vocalists, actors, dancers), we believe there is little to distinguish between these broader recommendations and those that may be more specifically aimed at care for dancers.

Methods

This study was supported by a grant from the Orthopaedic Section, Inc., of the American Physical Therapy Association and was undertaken as part of the strategic planning process for the Performing Arts Special Interest Group. This study used a non-experimental descriptive research design. The method chosen for this practice analysis reflects a standard methodology used by other healthcare practitioners to identify the current knowledge, skills, and abilities (KSAs) used within a particular scope of practice.¹⁰⁻¹⁴ A detailed explanation of each of the steps taken to analyze per-

forming arts physical therapy practice, as well as all other aspects of the study, are available in the full-length technical report available on the Internet (www.orthopt.org). Table 1 provides a general outline of the steps followed.

Literature and Document Review

A literature and document review was performed to provide an overview of the following topics:

- Expert Practice in Physical Therapy^{15,16};
- Clinical Reasoning in Manual Therapy¹⁷;
- Non-Clinical Competencies^{18,19};
- Developing Expert-Based Decision Support Systems²⁰;
- Practice Analysis Survey Instruments¹⁰⁻¹⁴; and
- Descriptions of Advanced Clinical Practice for Orthopaedic, Sports, and Orthopaedic Manual Physical Therapy.²¹⁻²³

The review of the literature did not reveal any practice analysis study or body of universally agreed upon competencies for physical therapy for performing artists.

Establish a National Advisory Group of Content Experts

A NAG was established to identify the KSAs required for practice in performing arts physical therapy, to pilot the survey once the instrument was developed by a steering committee, and to review and comment on the results of the final survey. A list of 31 potential members was compiled in the Fall of 2000 using a purposive sampling technique. Criteria for selection are detailed in Table 2.

Table 2 Criteria for Selection of National Advisory Group Members

Nationwide geographical distributions
Diversity of practice settings
Diversity of post-professional training
Experience in Performing Arts Physical Therapy (at least five years, at least 20% of patient population)
Diversity of clinicians, educators, and researchers
Contribution to the advancement of Physical Therapy in the Performing Arts Sub-specialty

Final selection of the 16 members was based on meeting the established criteria, as well as, availability for specified meeting dates. An alternate list of an additional six content experts was also generated. Although the alternates were not available for specified meeting dates, they were available for phone consultation. In addition to the subject matter experts, a group facilitator was also retained to help guide the NAG through the process of generating a list of KSAs.

Develop the Draft Competencies and Survey Instrument

The NAG met with a group facilitator in the spring of 2000. Using a consensus building process, the NAG developed a list of KSA's that physical therapists treating performing artists must possess. Based on the NAG-generated KSA's, a review of the literature, and the *Guide to Physical Therapist Practice*,²⁴ a steering committee (formed by the principal investigator and two members of the NAG) drafted a list of 201 line items describing physical therapists practicing in the performing arts subspecialty. For the purposes of the survey, skills and abilities were grouped under technical (clinical) and non-technical (non-clinical) responsibilities. The knowledge required to execute the relevant responsibilities was grouped under a separate category (knowledge). During this process, the steering committee decided that any description of specialized practice must be comprehensive and describe the specialty (or subspecialty) in its entirety. Thus, *general* knowledge and responsibilities as well as those *unique* to performing arts physical therapists were included in the list of competencies.

The steering committee converted the list of competencies into a survey

instrument that was organized to reflect the *Guide to Physical Therapist Practice*, and designed to answer the following research question: What clinical competencies (i.e., knowledge and responsibilities) are required for physical therapists to practice in the performing arts subspecialty?

Pilot Study of the Survey Instrument

To improve the content and face validity of the survey instrument, the members of the NAG plus the six alternates were asked to pilot the survey in the Fall of 2001. Their responses were used to validate the knowledge and responsibility competencies, validate the scales being used to rate each competency, determine the length of time for taking the survey, and identify any additional problems with instructions or procedures.

Based on their responses, the instrument was revised to decrease redundancy, improve the clarity of the scales used to rate each item, and simplify the instructions for filling out the survey.

Final Version of the Survey Instrument

Final revisions and modifications were made based on the pilot group's comments during the Summer of 2002. The final survey instrument consisted of four sections: technical responsibilities (clinical), non-technical (non-clinical) responsibilities, knowledge areas, and background information (demographics). Table 3 summarizes the dimensions assessed in the first three categories.

Technical Responsibilities

This section was designed to ascertain what clinical skills performing arts physical therapists execute in their daily professional roles. Eighty-two

competencies were organized into eight practice dimensions. These practice dimensions reflect the organization of the *Guide to Physical Therapist Practice* (Table 3). Respondents were asked to rate the frequency with which each responsibility was performed on a 0 to 4 Likert Scale (0 = never, 1 = less than once per month, 2 = monthly, 3 = weekly, 4 = daily). Whether or not respondents performed a specific task, they were also asked to rate criticality on a 0 to 3 Likert Scale (0 = not critical, 1 = minimally critical, 2 = moderately critical, 3 = extremely critical).

Non-technical Responsibilities

This section was designed to assess the other professional responsibilities that are performed on a routine basis by clinicians specializing in performing arts. Fifteen competencies were organized into five non-technical dimensions (Table 3). Non-technical responsibilities were assessed using the same Likert Scales as for technical responsibilities.

Knowledge Areas

Forty-four knowledge competencies were identified as part of performing arts physical therapy practice. These competencies were organized into seven knowledge dimensions (Table 3). Respondents were asked to rate frequency and criticality as was done in the technical and non-technical responsibilities sections. In this section, however, respondents were also asked to rate level of judgment using a 0 to 3 Likert Scale [0 = not used in practice, 1 = recall (ability to recall or recognize specific information only), 2 = application (ability to comprehend, interpret, or apply knowledge to new or changing situations), 3 = analysis (ability to analyze information, put information together to arrive at a solution, and evaluate the usefulness of that solution)]. At the end of this section, respondents were also given an opportunity to comment or list any other important responsibilities or knowledge areas that should have been included.

Demographics

The information gathered in this section of the survey was collected in two

Table 3 Categories within Sections 1-3 of the Survey

Technical Responsibilities	Non-technical Responsibilities	Knowledge Areas
1. Emergency Care	1. Prevention and	1. Human Anatomy, Physiology and Pathophysiology
2. Patient Examination	Promotion of	2. Movement Science
3. Evaluation	Health, Wellness,	3. Orthopaedic Medical/Surgical Interventions
4. Diagnosis	and Fitness	4. Evidence-Based Theory and Practice
5. Prognosis	2. Education	5. Resources/Laws/Arts Organizations
6. Intervention	3. Critical Inquiry	6. Demands of Art Forms
7. Reexamination	4. Professional Conduct	7. Typical Presentation of Individual Performers
8. Outcomes	5. Administration	

Table 4 Groups of Healthcare Professionals Sampled

1. Performing Arts Special Interest Group of the Orthopaedic Section of the APTA
2. International Association for Dance Medicine and Science (non-redundant members with PASIG only)
3. Performing Arts Medicine Association (non-redundant members with PASIG only)
4. Other Physical Therapists who were identified by NAG members as having significant experience treating performers and who were not captured in the previous three groups

ways. Closed-ended, fixed-response questions gathered information about geographic location, primary practice setting, years of experience, level of education and specialty certifications, percentage of performing arts clientele, membership in other professional organizations, and necessity to treat across interstate lines. Open-ended responses gathered information about affiliations with specific performing arts organizations as well as research interests (current and future).

Administration of the Survey Instrument

A convenience sample was performed using mailing lists acquired from three groups of healthcare professionals whose explicit mission is to increase the health of performers (Table 4). The survey was limited to physical therapists within these groups practicing within the United States. In addition, members of the National Advisory Group identified a small number of physical therapists within the United States whose practice primarily involves treating performers, but whom do not belong to one of the three groups.

Sample solicitation included letters by direct mail, e-mail announcements to the Orthopaedic section members, and verbal announcements at professional meetings. A total of 650 performing arts physical therapists were solicited. Five hundred and fifty-five packets were sent out via the United States Postal Service, and 95 were distributed via electronic mail.

The Survey Packet

Each survey packet contained the survey itself as well as a letter of explanation that addressed the purpose of the study, assurances of confidentiality, and instructions for returning the survey instrument.

Follow-Up Mailing

Approximately two weeks after the initial mailing, a follow-up postcard was sent to members of the entire sample. The purpose of the postcard was to encourage completion of the survey as well as ensure that all individuals had, indeed, received a survey. Two electronic mail reminders were also distributed at four and six-week intervals via the Orthopaedic section to encourage responses and capture

additional participants.

Data Analysis

The psychometric consultants reviewed all raw data and prepared the data set layout for analysis. Data were entered for analysis using the SAS statistical package. Means and standard deviations were calculated for each competency and then rank ordered. Thus, the mean responses for responsibilities were rank ordered by frequency and then again by criticality, while the mean responses for knowledge areas were rank ordered by frequency, then by criticality, and then by level of judgment.

Results

Of the 650 surveys distributed, 93 were returned. Of those returned, 10 had to be thrown out because of significant portions of missing data. Thus, the actual response rate was 13%. The low response rate is the main limitation of the study. The primary reason for failure to return the survey appeared to be its length. At 144 items, plus demographics, it took over an hour to complete. Further, the inclusion of two grading levels that were conceptually similar for many subjects (criticality and judgment) added a level of complexity that increased frustration and decreased completion. Future studies should attempt to minimize the time required to complete the survey and reduce the complexity of the grading scale and instructions.

Demographic Information

Table 5 summarizes the most relevant characteristics of the respondents. For a complete description of all of the demographic variables see www.orthopt.org. The greatest proportions of respondents were from the Northeast and the West, and most practice in an outpatient setting. Forty-five percent of the respondents had been practicing for ten or fewer years. The majority of respondents had between four and ten years of experience treating performing artists. Most respondents had a bachelor's or master's degree in physical therapy with no additional specialty certification. Of those who

Table 5 Major Demographic Characteristics of Survey Respondents

Demographic Variable	Percent of Respondents*
Total Years Practicing Physical Therapy	
0-3	20
4-10	26
11-20	24
21 or more	31
Total Years of Experience Treating Performing Artists	
0-3	29
4-10	40
11-20	24
21 or more	6
Percentage of Client Load who are Performing Artists	
0	5
1-20	53
21-40	16
41-60	7
61-80	8
81-100	11

*Percentages may not add up to 100% because of rounding.

Table 6 Summary of Likert Scales Used for Rating all Survey Items**Frequency**

How frequently does the performing arts physical therapist use this knowledge?

- (0) Never
- (1) Less than once per month
- (2) Monthly
- (3) Weekly
- (4) Daily

Criticality

Criticality refers to the level at which a performing arts specialist does an activity more efficiently and effectively than another practitioner treating performing arts patients. For optimal patient care outcomes, how critical is this knowledge to performing arts specialty practice?

- (0) Not critical
- (1) Minimally critical
- (2) Moderately critical
- (3) Extremely critical

Level of Judgment*

At what level is this knowledge used?

- (0) Not used in practice
- (1) *Recall* (requires ability to recall or recognize specific information only)
- (2) *Application* (requires ability to comprehend, interpret or apply knowledge to new or changing situations)
- (3) *Analysis* (requires ability to analyze information, put information together to arrive at a solution, and evaluate the usefulness of the solution)

*Used for rating knowledge areas only.

did have specialty certifications, most were Orthopaedic Certified Specialists, followed by certifications in Manual Therapy and Pilates. Most respondents were also members of the American Physical Therapy Association, the Orthopaedic Section, and the Performing Arts Special Interest Group. Forty-four percent of the respondents were also members of the

International Association for Dance Medicine and Science.

Among the respondents, the performing artist client load was typically between 1% and 40% of the respondent's total patient population. However, 11% of the respondents treated performing artists between 81% and 100% of the time. Dancers comprise the largest group of per-

forming artists treated in our sample, followed distantly by musicians and ice skaters. Forty-six percent of our respondents essentially treat a single type of performing artist patient (40% treat dancers exclusively; 5% treat musicians exclusively, and 1% treat figure skaters exclusively), while the remainder treat a mix of performing artist patient types. Fifty percent of the respondents have affiliations with a specific performing arts organization, and most of those are dance companies. Thirteen percent of the respondents reported that they must cross state lines to practice because they provide services to touring companies.

Open-ended questions about current and future research interests revealed that evidence regarding the biomechanics of healthy dance, intrinsic and extrinsic risk factors for dance injuries, and the effect of conditioning on performance enhancement were top priorities.

Analysis of Overall Responsibilities and Knowledge

Table 6 displays the description of the Likert scales that were provided to the subjects with the survey and defines the meanings of frequency, criticality, and level of judgment. Only frequency and criticality were used to assess responsibilities, while frequency, criticality, and judgment were used to assess knowledge. A summary of the means and standard deviations for responsibilities and knowledge areas are presented in Appendices A and B, respectively. The mean values found in these appendices are displayed graphically in Figure 1 for responsibilities and Figure 2 for knowledge areas. As Figure 1 demonstrates, the mean values for responsibility generally remained above a level "2." For frequency, this implies that the responsibility occurs at least monthly. For criticality, this implies that the responsibility was at least moderate. There were, however, 11 mean values below "2" for frequency, and five mean values below "2" for criticality. Those 12 responsibility items falling below a "2" are displayed in Table 7.

For knowledge areas, Figure 2

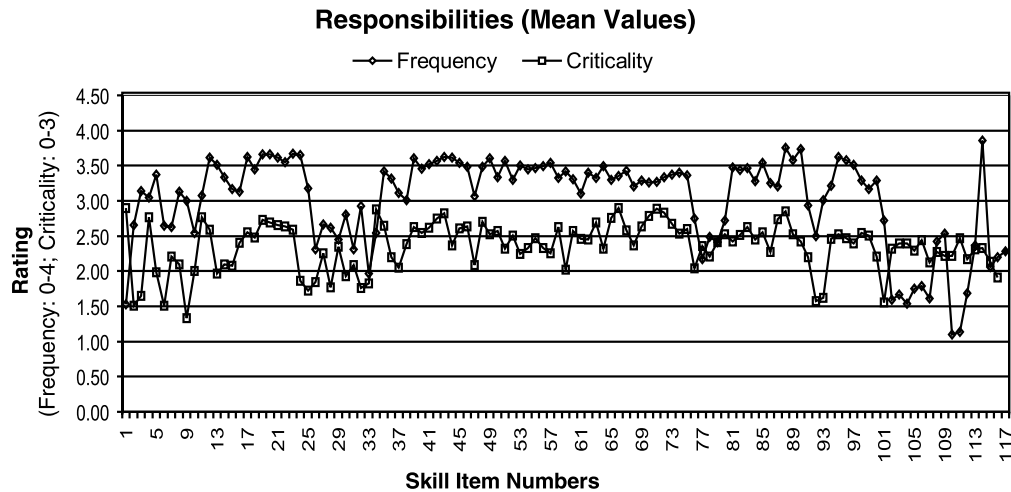


Figure 1 Summarized frequency and criticality data for professional responsibilities. For a complete description of the 117 items, see Appendix A.

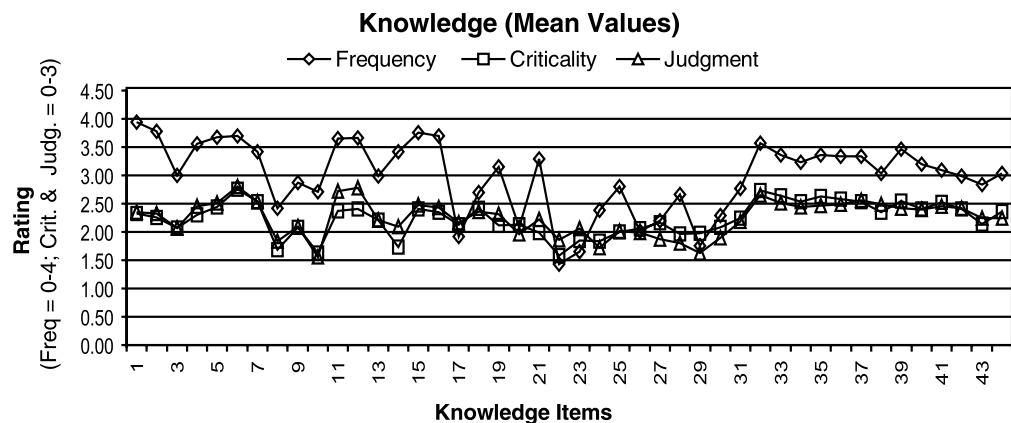


Figure 2 Summarized frequency, criticality, and judgment data for knowledge areas. For a complete description of the 44 items, see Appendix B.

indicates that the mean values are generally above a level “2” – again suggesting that frequency occurs at least monthly and that criticality was at least moderate for these items. In the area of knowledge, there is the additional category of judgment. A mean score of “2” implies that the knowledge was needed at least at the level of application, which is where the majority of our knowledge areas fell. Across all three categories within the knowledge area, there were 23 mean values that were lower than a “2.” Those survey items are displayed in Table 8.

Description of Unique Performing Arts Responsibilities and Knowledge

While Figures 1 and 2 summarize the mean values obtained from all

competencies used to treat performing artists, Table 9 summarizes those competencies listed in Appendices A and B that are clearly unique to treating performing artists.

Discussion

The National Advisory Group (NAG) was asked to review the results of the survey, and, as subject matter experts, provide input as to what items should be included or excluded from a final Description of Specialized Practice (DSP). There are no standard decision rules that dictate how to interpret the results of the survey. Ultimately, the NAG wanted to create a DSP that fulfilled two purposes: 1. To reflect the genuine skills and knowledge possessed by physical therapists who currently treat performing artists, and 2. to

describe the skills and knowledge necessary for future practice in an environment where therapists have increasing responsibilities for autonomous practice.

The majority of items in the survey had high mean values for frequency, criticality, and, where applicable, level of judgment. Almost all responsibilities occur at least monthly. There were twelve exceptions under responsibilities, although these items occurred more than “never” and less than “monthly.” After viewing the specific items that occur infrequently the NAG agreed that infrequent does not mean unimportant. For example, emergency first aid may be performed infrequently, but it is extremely important. In terms of criticality, no responsibility or

Table 7 Mean Scores for Responsibilities Falling Below 2

Type of Ranking	Scores Below 2	Description of Competency
Frequency	1.10	Contribute to performing arts physical therapy body of knowledge by performing some form of clinical research (e.g., case studies and clinical trials) or sharing observations through presentations or other related activities
	1.13	Identify research needs within the field of performing arts, evaluate outcomes data and assess new concepts and technologies
	1.53	Recognize injuries and illnesses that require emergency medical intervention and provide emergency care, management, transport, and referral as appropriate
	1.54	Educate and collaborate with management regarding the impact of organizational structure (e.g., rehearsal schedule, lay-off periods, break periods) and the practice and performance environment (e.g., floors and surfaces, temperature) on health of performers
	1.60	Perform outcomes data collection for use in statistical reports
	1.61	Educate other health care and performing arts professionals and administrators, and the public at large, as to the scope and role of physical therapists in the performing arts and the injury prevention needs of performers
	1.96	Autonomic nervous system (e.g., vasomotor instability, excessive or absent swelling, pupil constriction)
	Criticality	1.33
1.51		Obtain data on living environment and community characteristics
1.51		Obtain general demographic information
1.65		Obtain social history (e.g., cultural beliefs and support systems)
1.73		Aerobic capacity and endurance: assess aerobic capacity in relationship to performance requirements (e.g., dyspnea perceived exertion, heart rate)

Table 8 Mean Scores for Knowledges Falling Below 2

Type of Ranking	Scores Below 2	Description of Competency
Frequency	1.44	Research methods and design
	1.65	Methods of analysis of research findings applicable to physical therapy for performing artists
	1.75	Other organizations devoted to performing arts healthcare (e.g., IADMS, PAMA, etc.)
	1.92	Emergency first aid procedures and interventions
Criticality	1.58	Research methods and design
	1.63	Basic pharmacology
	1.68	Imaging studies and ancillary tests
	1.74	Evidence-based theory and practice relative to modalities
	1.84	Community and medical resources
	1.85	Methods of analysis of research findings applicable physical therapy for performing artists
	1.96	Alternative and complementary healthcare providers
	1.97	Other organizations devoted to performing arts healthcare (e.g., IADMS, PAMA, etc.)
Judgment	1.99	Multiple methods, styles and levels of communication and learning
	1.55	Basic pharmacology
	1.62	Other organizations devoted to performing arts healthcare (e.g., IADMS, PAMA, etc.)
	1.72	Community and medical resources
	1.80	Alternative and complementary healthcare providers
	1.84	Imaging studies and ancillary tests
	1.85	Research methods and design
	1.87	Organizational structure of performing arts management and venues (e.g., artistic director, conductor, teachers, off-site physician)
	1.90	Adaptive, supportive equipment and supplies available to the performing arts community
	1.97	Performing arts functional scales
	1.98	Alternative pathways for provision and reimbursement of healthcare services within the performing arts settings (e.g., direct payment of services from company management)

knowledge item was ranked as low as minimally critical. Similar arguments can be made for the responses for frequency and criticality re-

sponses for knowledge. As for level of judgment associated with the knowledge items, Figure 2 shows that “criticality” and “judgment”

generally received very similar ratings on each item. It may be that the distinction between these two constructs was not well perceived.

Table 9 Competencies Unique to Performing Artists

Technical Professional Responsibilities

Emergency care executed backstage

Patient Examination

Obtain a history that includes:

- Data regarding performance requirements and occupational demands (e.g., training, touring, performing demands)
- Ergonomic considerations including temperature of performance space, costumes, footwear, instrument type, flooring, constraints to movement
- Skill and experience level of the performer
- Use of adaptive devices or modifications of costumes or instruments
- Health status data that includes psychosocial factors of performance anxiety, performance organization politics and expectations, and body perception relative to aesthetic demands

Conduct a physical exam to collect data regarding:

- Ergonomics and body mechanics related to performer's specific artform.
- Environmental hazards and health and safety risks to include training duration and intensity as well as recent changes in training, performance, rehearsal schedule or repertoire
- Balance during static and dynamic performance-specific activities
- Performance specific functional tests to determine performer's ability and readiness to return to performance-specific demands
- Effectiveness of assistive devices or adaptive equipment used during performance activities (e.g., instrument, costume, or footwear modifications)
- Performer's ability to demonstrate the skillful and efficient assumption, maintenance, modification, and control of performance-specific postures and movement patterns
- Abnormal muscle activation patterns during performance-specific motion
- Alignment and posture during performance-specific activities
- Bony and structural asymmetries in performance specific positions
- Available active and passive range of motion compared to expected range with respect to performance specific requirements

Evaluation

- Determine relevance of biomechanical demands of performance as potentially related to the chief complaint
- Correlate history and physical examination findings to the knowledge of specific epidemiologic injury characteristics in the performing arts
- Develop impairment list to guide physical therapy interventions to improve performer-specific function

Prognosis

- Determine the performer's ability to continue participation without further injury
- Determine need for continuance, modification or discontinuance of training or performance
- Determine performance-specific criteria necessary to return to maximum participation in the respective art form (e.g., 90 minutes of pointe work without modification)
- Predict optimal level of improvement in performance-specific function and the amount of time needed to reach that level

Intervention

- Collaborate and coordinate with performance organization regarding performer's care, expected functional outcomes, and timeline for return to performance
- Collaborate with appropriate artistic support staff and family regarding modifications of art form to achieve desired outcomes
- Coordinate with insurance provider regarding performer's case management
- Actively engage cooperation of performer and associated artistic staff
- Directly address issues of compliance with performer given tendencies of noncompliance or excessive compliance in performing arts culture
- Educate performer and appropriate artistic support staff and family regarding requirements of optimal performance
- Provide functional training for performance to include:
 - Simulated performance environments and tasks
 - Injury prevention education relative to performance environment (e.g., schedule intensity, training duration, repertoire, etc.)
 - Therapeutic exercise with performance-specific considerations given to implementation and progression

Non-technical Professional Responsibilities

- Educate and collaborate with arts management regarding the impact of organizational structure (e.g., rehearsal schedule, lay-off periods, breaks) and practice and performance environment (e.g., floors, temperature) on health of performers

(Table continued on next page)

Table 9 Competencies Unique to Performing Artists (*continued*)

Educate other health care and performing arts professionals and administrators, and the public at large, as to the scope and role of physical therapists in performing arts and the injury prevention needs of performers
Maintain current knowledge of performing arts physical therapy techniques, methods and theories, as well as, current professional and medical-legal issues as they pertain to performing arts physical therapy
Identify research needs within the field of performing arts, evaluate outcomes data, and assess new concepts and technologies
Contribute to performing arts physical therapy body of knowledge by performing some form of clinical research
Manage staff and resources, including on and off-site services, for the performing artist while ensuring quality of services in those locations

Knowledge Areas

Biomechanics and pathomechanics relative to movement demands of performing arts
Ergonomic and environmental risk factors specific to various art disciplines
Orthotic, protective, and supportive devices related to the functional and aesthetic requirements of performing arts
Performing arts functional scales
Expected behaviors and social pressures related to injury management within the arts organization and the general performing arts community
Organizational structure of performing arts management and venues
Adaptive, supportive equipment and supplies available to the performing arts community
Alternative pathways for provision and reimbursement of healthcare services within the performing arts settings (e.g., direct payment of services from company management)
Other organizations devoted to performing arts healthcare
Specific practice and performance requirements of the performer (e.g., aerobic, range of motion, fine motor coordination, skill level)
Performer-specific epidemiological injury characteristics
Functional and aesthetic demands of various art disciplines
Training/performance demands
Typical training progressions within various art disciplines
Risk factors associated with over-training
Inconsistency between training demands and performance requirements
Typical anatomical and physiological characteristics of the performer within specific art disciplines
Impact of anatomical variations on performer's impairments
Psychosocial tendencies in performers relative to compliance, body awareness, pain perception, and performance anxiety
Psychological and emotional conditions typically seen in the performing arts population
Impact of behavioral health risk factors on performers' impairments

At any rate, the “judgment” values show that the majority of items require judgment that at least requires interpretation, integration, and application to new or changing situations. Based on the generally high scores of all items, and the desire to describe the skills and knowledge necessary for future practice in an environment where therapists have increasing responsibilities for autonomous practice, the NAG consensus was to include all items in the final DSP. In the future, it is always possible to exclude items if the consensus changes or to “weight” the relative importance of items in the construction of testing materials.

While the DSP thoroughly describes all competencies necessary to successfully treat performing artists, it is important to highlight

those competencies that are unique to the performing arts population. In part, treating performing artists is unique because it requires knowledge, skills, and abilities that draw from multiple clinical paradigms, including orthopaedic surgery, sports medicine, occupational therapy, and manual physical therapy. Perhaps, the most significant elements that contribute to the uniqueness of performing arts physical therapy practice, however, are the specific and distinct knowledge areas that apply to all of a performing arts specialist's responsibilities. In-depth knowledge of discipline-specific physical, social, emotional, political, and aesthetic demands are critical to successfully executing professional responsibilities to ensure optimal outcomes as well as decrease the risk and rate of future injuries.

Conclusions

The results of this survey study represent the core competencies that describe the standard of specialized practice for physical therapy for performing artists. These competencies should be used to guide the development of continuing education opportunities, post-professional educational curricula (e.g., residencies or fellowships), future research endeavors, and credentialing efforts in the subspecialty of physical therapy for performing artists.

Acknowledgments

The authors acknowledge the following organizations and individuals for their full support: The Orthopaedic Section of the American Physical Therapy Association; William G. Bouissonnault, PT, DHSc, FAAOMPT; Nancy White, PT, MSPT, OCS; the Performing Arts National Advisory Group, including Mary

Appendix A Mean and Standard Deviation for Frequency and Criticality of Responsibilities for Physical Therapy in the Performing Arts Subspecialty

Description of Responsibilities	Frequency		Criticality	
	Mean	SD	Mean	SD
1. Recognize injuries and illnesses that require emergency medical intervention and provide emergency care, management, transport, and referral as appropriate	1.53	1.04	2.70	0.61
2. Determine the extent of injury and possible sequela to appropriately determine whether the performer has the ability to continue participation without incurring additional injury	2.66	1.20	2.90	0.30
3. Obtain general demographic information	3.14	1.18	1.51	1.05
4. Obtain social history (e.g., cultural beliefs and support systems)	3.05	1.18	1.65	0.96
5. Obtain work/performance place and status data that includes, but is not limited to: current and prior work; performance requirements/occupational demands (e.g., training, touring, and performing demands); ergonomic considerations (e.g., temperature, costumes, footwear, instrument type, flooring, constraints to motion); level of skill/experience of the performer; and utilization of adaptive devices (e.g., taping, bracing, instrument modification)	3.38	0.95	2.77	0.48
6. Obtain growth and development history	2.65	1.29	1.99	0.73
7. Obtain data on living environment and community characteristics	2.63	1.21	1.51	0.89
8. Obtain general health status via self-report, family report, or caregiver report that includes, but is not limited to: physical function, psychological function, and psychosocial factors (e.g., performance anxiety, performance organization politics and expectations, life stressors, body perception, and emotional response to current condition)	3.13	1.08	2.21	0.80
9. Obtain data regarding social/health habits (past and current), including behavioral health risks (e.g., smoking, substance use, eating patterns, risk factors related to sexually transmitted diseases) and fitness level	3.00	0.99	2.10	0.85
10. Identify familial health risks (e.g., history of cancer)	2.54	1.34	1.33	0.97
11. Obtain medical/surgical history	3.07	1.12	2.00	0.99
12. Obtain data regarding current condition(s)/chief complaint(s) by identifying areas of primary and secondary symptoms including recognition of contributions from multiple sites; quality and behavior of symptoms, previous relevant history; current therapeutic interventions; goals of performer, family, caregiver, and artistic staff for the therapeutic intervention	3.62	0.69	2.77	0.59
13. Obtain data regarding functional status and activity level of daily living and performance-related tasks	3.51	0.83	2.59	0.72
14. Obtain data regarding medications currently and previously taken for chief complaint, and for other conditions	3.34	0.95	1.96	0.92
15. Obtain relevant data from other medical tests, records and clinical findings	3.17	0.99	2.10	0.96
16. Conduct a systems review to identify the impaired or unimpaired status of the cardiovascular/pulmonary system; musculoskeletal system; neuromotor system; integumentary system; and communication ability	3.13	1.11	2.08	0.92
17. Identifying relevant, consistent and accurate information	3.63	0.71	2.41	0.85
18. Assessing "red flags" and determining need based upon whether patient demonstrates: a) neuromusculoskeletal problems responsive to physical therapy intervention or, b) condition(s) requiring referral to another healthcare provider	3.45	0.84	2.55	0.81
19. Identifying chief and secondary problems	3.66	0.72	2.48	0.79
20. Developing a working hypothesis of the physical therapy diagnosis that includes a) nature and severity of problem(s), b) probable cause(s) of problem(s), c) anatomical structures involved, d) stage of condition, and e) possible contraindications to physical therapy examination	3.66	0.74	2.73	0.61
21. Includes examination techniques with a high probability of reproducing the chief complaint and contributing to the development and refinement of the working hypothesis(es)	3.61	0.75	2.70	0.62
22. Is comprehensive but has the focus and detail appropriate to the working hypothesis, the patient's problems, and the performance context	3.55	0.78	2.66	0.71
23. Considers the nature, severity and irritability of the symptoms/problems	3.67	0.72	2.63	0.68
24. Prioritizes areas, movements and functional activities to be examined as well as examination procedures and examination sequence	3.65	0.72	2.59	0.65
25. Anthropometric characteristics: a) assess edema, and b) assess body dimensions and composition	3.18	0.91	1.86	0.96
26. Aerobic capacity and endurance: assess aerobic capacity in relationship to performance requirements (e.g., dyspnea perceived exertion, heart rate)	2.31	1.19	1.73	0.88
27. Arousal attention and cognition: assess patient-determined effects of cooperation and motivation (depression or impaired motivation) on rehabilitation process	2.66	1.23	1.85	0.97
28. Assistive and adaptive devices: assess effectiveness of assistive or adaptive devices or equipment used during performance activities (e.g., instrument modifications)	2.61	1.09	2.26	0.82

Appendix A (Continued)

Description of Responsibilities	Frequency		Criticality	
	Mean	SD	Mean	SD
29. Circulation (arterial, venous, lymph): assess circulatory condition (e.g., vertebral artery examination, skin condition, thoracic outlet tests, and peripheral pulses)	2.45	1.16	1.77	0.90
30. Response to palpatory provocation with special consideration of nerves at risk due to performance demands	2.81	1.14	2.35	0.78
31. Disorders of the central nervous system (e.g., abnormal reflexes, muscle hypertonicity, coordination deficits)	2.31	1.32	1.93	0.98
32. Peripheral nervous system (e.g., sensory and motor deficits corresponding to segmental level or individual nerve)	2.93	1.06	2.09	0.98
33. Autonomic nervous system (e.g., vasomotor instability, excessive or absent swelling, pupil constriction)	1.96	1.36	1.76	1.00
34. Sensory nerve distribution (e.g., discrimination tests, thoracic outlet tests, pain, light touch, pressure)	2.54	1.23	1.82	1.05
35. Ergonomics and body mechanics: assess environmental hazards, and health and safety risks, including but not limited to: training duration/intensity, recent changes in training/performance/rehearsal schedule, repertoire, temperature, costumes, footwear, instrument type, flooring, constraints to motion, and presence of actual, potential or repetitive trauma	3.42	0.83	2.88	0.36
36. Gait, locomotion and balance: assess balance during static and dynamic performance-specific activities	3.31	0.95	2.64	0.60
37. Changes in body contour that suggests underlying musculoskeletal dysfunction (e.g., effusion)	3.11	1.05	2.20	0.89
38. Changes in skin quality and appearance associated with underlying musculoskeletal dysfunction (e.g., adhesion formation, lesions, vascular insufficiency, temperature changes)	3.01	1.14	2.05	0.93
39. Soft tissue mobility	3.60	0.78	2.38	0.92
40. Ligamentous stability	3.46	0.82	2.63	0.80
41. Accessory motion	3.52	0.80	2.54	0.85
42. Compensatory movements	3.57	0.78	2.62	0.66
43. Abnormal patterns of muscle activity during active and performance-specific motion	3.62	0.75	2.75	0.52
44. Ability to demonstrate the skillful and efficient assumption, maintenance, modification and control of performance-specific postures and movement patterns (considering patterns of co-contraction/stabilization/disassociation)	3.61	0.73	2.83	0.38
45. Muscle tension and atrophy	3.54	0.82	2.37	0.89
46. Muscle strength, power, endurance during performance-specific functions	3.48	0.83	2.60	0.66
47. Orthotic, protective and supportive devices: effectiveness of orthotic, protective and supporting devices used during performance activities (e.g., taping, bracing, footwear modifications)	3.06	1.01	2.64	0.53
48. Pain and nociception	3.49	0.80	2.09	0.94
49. Alignment of body segments during activities of daily living and during performance-specific activities	3.60	0.73	2.70	0.58
50. Bony anomalies or structural asymmetries and assess relative positions of bony prominences in neutral and performance-specific positions	3.34	0.94	2.53	0.73
51. Available AROM compared with expected range with respect to age, body type, physical condition and performance-specific requirements	3.57	0.77	2.57	0.74
52. Effects of altering position at an associated segment on available AROM (e.g., the effect of cervical side-bending on active shoulder abduction)	3.30	0.93	2.32	0.89
53. Effects of weight-bearing, repeated, sustained or combined movements on AROM and symptom generation	3.51	0.79	2.51	0.74
54. Symptoms, crepitus or sounds associated with AROM and point of AROM in which they occur	3.45	0.75	2.25	0.84
55. Onset, quality and amount of motion of bony landmarks during AROM	3.46	0.83	2.33	0.92
56. Available PROM compared with expected range with respect to age, body type, physical condition and performance-specific requirements	3.49	0.80	2.47	0.84
57. The nature of the limitation at the end of the available range (e.g., end feel)	3.54	0.83	2.33	0.92
58. Effects of repeated, sustained or combined movements on PROM and symptom generation	3.33	0.90	2.26	0.88
59. Available range of muscle flexibility by use of muscle length tests compared with performance-specific requirements (including single and multijoint structures)	3.41	0.90	2.63	0.64
60. Symptoms, crepitus or sounds associated with PROM and point of PROM in which they occur	3.30	0.90	2.03	0.87
61. Work (job/school/play), community and leisure integration or reintegration (including IADL): assess performer's ability and readiness to return to performance-specific demands via functional tests	3.10	1.09	2.57	0.73

Appendix A (Continued)

Description of Responsibilities	Frequency		Criticality	
	Mean	SD	Mean	SD
62. Correlate history and physical examination findings to identify contributory, noncontributory and inconsistent information	3.40	0.90	2.46	0.76
63. Differentiate a neuromusculoskeletal from a non-neuromusculoskeletal problem	3.33	0.94	2.45	0.86
64. Establish clinical judgment regarding examination findings, including but not limited to: priority, nature and severity of problems(s); location and type of involved structures(s); possible indications, cautions or contraindications to physical therapy management; pathological sources of symptomatology; and psychosocial factors affecting management	3.49	0.90	2.69	0.66
65. Correct deficiencies in examination as appropriate	3.30	0.99	2.32	0.83
66. Correlate history and physical examination findings to knowledge of specific epidemiologic injury characteristics in the performing arts	3.36	0.99	2.76	0.49
67. Determine relevance of biomechanical demands of performance potentially related to the chief complaint (e.g., plantar flexion range of motion as causative factor in posterior impingement)	3.43	0.89	2.90	0.30
68. Develop impairment list to guide physical therapy interventions to improve performer-specific function	3.20	1.11	2.58	0.66
69. Organize examination findings into clusters, syndromes, or categories to which physical therapy interventions will be directed and to determine prognosis	3.29	0.95	2.37	0.70
70. Predict the optimal level of improvement in performance-specific function and the amount of time needed to reach that level	3.27	0.94	2.63	0.58
71. Determine performance-specific criteria necessary to return to maximum possible participation in the art form (e.g., 90 minutes of pointe work without modification)	3.27	1.04	2.79	0.44
72. Determine the performer's ability to continue participation without further injury	3.34	0.98	2.89	0.39
73. Determine need for continuance, modification, or discontinuance of training and/or performance	3.38	0.91	2.83	0.44
74. Determine treatment priorities through identification of performer's primary problem(s) which have the highest probability of responding to physical therapy intervention	3.40	0.94	2.67	0.65
75. Develop a plan of care that includes: a) establishment of list of specific interventions, b) frequency and duration of interventions, c) anticipated goals, d) expected outcomes, and e) D/C plan	3.37	0.92	2.53	0.78
76. Collaborate and coordinate with performance organization regarding performers' care, expected functional outcomes and timelines for return to performance	2.75	1.18	2.60	0.65
77. Coordinate with insurance provider regarding performer's case management	2.17	1.26	2.04	0.90
78. Collaborate with appropriate artistic support staff and/or family regarding modifications of art form/lifestyle activities necessary to maintain/improve health of the performer	2.49	1.25	2.36	0.73
79. Refer to other professionals or resources when necessary	2.41	1.04	2.21	0.82
80. Educate the performer and appropriate artistic support staff/family regarding requirements of optimal performance (e.g., dietary guidelines, substance abuse, sleep deprivations, smoking)	2.72	1.13	2.42	0.66
81. Discuss examination findings, diagnosis, and prognosis and outline expected outcomes with patient/client	3.48	0.80	2.52	0.76
82. Discuss/negotiate acceptable treatment goals, plan, and responsibilities	3.44	0.88	2.42	0.83
83. Outline responsibility of patient in order to achieve established goals	3.46	0.83	2.51	0.86
84. Actively engage cooperation of the patient and associated artistic staff by using appropriate methods, style and level of communication	3.28	0.93	2.63	0.74
85. Educate patient in home care treatment	3.54	0.83	2.45	0.82
86. Directly address issues of compliance with performer given tendencies of noncompliance/excessive compliance in performing arts culture	3.25	0.94	2.55	0.71
87. Provide program of follow-up care	3.20	0.94	2.27	0.91
88. Therapeutic exercise: performance-specific considerations to the implementation and progression of the following interventions: a) aerobic capacity/endurance training; b) balance, coordination and agility training; c) body mechanics and postural stabilization; d) flexibility exercises; e) gait and locomotion training; f) neuromotor training; g) relaxation training; and h) strength, power, and muscular endurance training	3.76	0.62	2.74	0.54
89. Functional training for performance, including a) simulated environments and tasks, task adaptation, task training, work conditioning and work hardening; and b) injury prevention education relative to performance environment (e.g., schedule intensity, training duration, repertoire, temperature, costumes, footwear, instrument type, flooring/surface, constraints to motion, presence of actual, potential or repetitive trauma)	3.58	0.72	2.85	0.42
90. Manual therapy techniques (e.g., manual traction, connective tissue massage, therapeutic massage, mobilization/manipulation, passive range of motion)	3.73	0.65	2.53	0.84

Appendix A (Continued)

Description of Responsibilities	Frequency		Criticality	
	Mean	SD	Mean	SD
91. External dressings, supports, braces, protective taping/devices and cushions (with consideration to aesthetic requirements)	2.94	1.03	2.42	0.69
92. Integumentary repair and protection techniques (e.g., application of dressings and topical agents, and education regarding skin care relative to performance demands, such as blisters, corns, abrasions)	2.50	1.32	2.20	0.74
93. Electrotherapeutic modalities	3.01	1.04	1.58	0.92
94. Physical agents and mechanical modalities	3.21	1.01	1.62	0.92
95. Assess response to intervention	3.62	0.66	2.46	0.85
96. Analyze significance of changes in patient status as it relates to the treatment plan (i.e., relationship between anticipated result intervention and actual result, cause of change, adequacy of change, factors that limit progress)	3.58	0.69	2.53	0.76
97. Modify plan of care as needed (e.g., alter interventions, tests used, referral necessary)	3.51	0.72	2.47	0.81
98. Modify goals as needed (e.g., evaluate whether goals are realistic, modify relative to new tests and measures)	3.29	0.85	2.40	0.83
99. Recognize when performer has received optimal benefit from physical therapy	3.17	0.97	2.54	0.76
100. Anticipate performer's needs and prepare for discharge	3.29	0.85	2.51	0.73
101. Characterize or quantify the impact of physical therapy interventions on the following domains: pathology, impairments, function (e.g., ADL, performance-specific), disability (e.g., family, community, performance roles), risk reduction/prevention, health/wellness/fitness, performing arts organizational resources, patient/client satisfaction	2.72	1.23	2.21	0.73
102. Perform outcomes data collection for use in statistical reports	1.60	1.27	1.56	0.84
103. Plan, coordinate and administer preparticipation and ongoing screening activities for identification of lifestyle factors (e.g., diet, smoking, substance abuse), performance/training place factors (e.g., seating arrangements of orchestra, floor/surface conditions, temperature) and individual neuromusculoskeletal factors (strength, power, endurance, flexibility) that may lead to increased risk for health problems or preclude performers' participation	1.67	1.15	2.32	0.69
104. Educate and collaborate with management regarding the impact of organizational structure (e.g., rehearsal schedule, lay-off periods, break periods) and practice/performance environment (e.g., floor/surface, temperature) on health of performers	1.54	1.09	2.40	0.65
105. Prescribe and conduct programs in prevention using individual and group training (e.g., strengthening, stretching, posture, balance, endurance), ergonomic redesign, and education	1.75	1.19	2.39	0.73
106. Contribute to the professional development of other physical therapists by teaching and mentoring	1.79	1.09	2.29	0.75
107. Educate other healthcare and performing arts professionals/administrators, and the public at large, as to the scope and role of physical therapists in the performing arts and the injury prevention needs of performers	1.61	1.05	2.44	0.69
108. Apply scientific methods to read and critically review the professional literature	2.42	0.86	2.13	0.74
109. Integrate current, scientifically valid research into performing arts physical therapy practice	2.54	1.08	2.27	0.75
110. Contribute to performing arts physical therapy body of knowledge by performing some form of clinical research (e.g., case studies and clinical trials) and/or sharing observations through presentations or other related activities	1.10	0.92	2.22	0.78
111. Identify research needs within the field of performing arts, evaluate outcomes data and assess new concepts and technologies	1.13	1.03	2.22	0.70
112. Maintain current knowledge of performing arts physical therapy techniques, methods, and theories as well as current professional/medical-legal issues as they pertain to performing arts physical therapy through attendance at professional education venues and where current research is reviewed/reported	1.68	1.09	2.47	0.68
113. Maintain active participation in professional organizations that address issues related to performer's health	2.37	1.24	2.18	0.95
114. Maintain adherence to APTA Code of Ethics	3.85	0.57	2.31	1.15
115. Consult with and/or educate peers, colleagues, other healthcare professionals, community agencies, legislative and/or regulatory organizations regarding issues of physical therapy practice pertaining to the performing arts	2.06	1.15	2.33	0.73
116. Manage staff and resources, including on and off-site services, for the performing artist while ensuring quality of services in those locations	2.20	1.47	2.13	0.83
117. Plan, direct, organize and manage human, technical, environmental and financial resources effectively and efficiently	2.28	1.47	1.91	1.01

Appendix B Mean and Standard Deviation for Frequency, Criticality and Level of Judgment for Knowledge Areas Necessary for Physical Therapy in the Performing Arts Subspecialty

Description of Knowledge	Frequency		Criticality		Judgment	
	Mean	SD	Mean	SD	Mean	SD
1. Normal and abnormal human anatomy	3.94	0.29	2.33	0.89	2.35	0.62
2. Physiology and pathophysiology	3.78	0.57	2.26	0.93	2.32	0.59
3. Normal and abnormal growth and development	3.00	1.13	2.07	0.79	2.07	0.68
4. Principles of motor learning/control	3.56	0.87	2.30	0.91	2.45	0.64
5. Principles of balance	3.67	0.73	2.44	0.76	2.51	0.60
6. Biomechanics and pathomechanics relative to movement demands of performing arts, considering single and multijoint systems	3.70	0.70	2.75	0.59	2.81	0.49
7. Ergonomic and environmental risk factors specific to various art disciplines	3.42	0.90	2.53	0.66	2.53	0.66
8. Imaging studies and ancillary tests	2.42	1.12	1.68	0.81	1.84	0.78
9. Orthopaedic surgical and nonsurgical interventions	2.87	1.09	2.08	0.80	2.09	0.68
10. Basic pharmacology	2.71	1.03	1.63	0.83	1.55	0.64
11. Selection, sequencing, proper execution of tests and measures necessary for differential diagnosis	3.65	0.64	2.37	0.84	2.72	0.48
12. Sign/symptom clusters, syndromes, or categories that correlate to physical therapy diagnoses	3.66	0.64	2.41	0.86	2.78	0.48
13. Signs/symptoms beyond the scope of physical therapy management	2.99	1.07	2.21	0.91	2.21	0.77
14. Evidence-based theory and practice relative to modalities	3.42	0.83	1.74	0.94	2.09	0.68
15. Evidence-based theory and practice relative to therapeutic exercise and functional re-education	3.76	0.61	2.40	0.78	2.48	0.64
16. Evidence-based theory and practice relative to manual therapy techniques	3.69	0.59	2.35	0.87	2.43	0.64
17. Emergency first aid procedures and interventions	1.92	1.30	2.13	1.00	2.16	0.68
18. Orthotic, protective, and supportive devices related to the functional and aesthetic requirements of performing arts	2.69	1.11	2.42	0.71	2.36	0.67
19. Preferred practice patterns used to treat physical therapy diagnoses	3.15	1.29	2.12	0.93	2.32	0.73
20. Performing arts functional scales	2.08	1.51	2.13	0.72	1.97	0.80
21. Multiple methods, styles and levels of communication and learning	3.29	1.08	1.99	0.88	2.22	0.70
22. Research methods and design	1.44	1.09	1.58	0.80	1.85	0.94
23. Methods of analysis of research findings applicable to physical therapy for performing artists	1.65	1.11	1.85	0.86	2.06	0.92
24. Community and medical resources	2.38	1.20	1.84	0.86	1.72	0.78
25. Applicable medical/legal/ethical issues	2.81	1.26	2.00	0.92	2.01	0.77
26. Alternative pathways for provision and reimbursement of healthcare services within the performing arts settings (e.g., direct payment of services from company management)	2.01	1.35	2.06	0.83	1.98	0.80
27. Organizational structure of performing arts management and venues (e.g., artistic director, conductor, teachers, off-site physician)	2.20	1.38	2.16	0.83	1.87	0.80
28. Alternative and complementary healthcare providers	2.67	1.06	1.96	0.83	1.80	0.75
29. Other organizations devoted to performing arts health care (e.g., IADMS, PAMA, etc.)	1.75	1.07	1.97	0.75	1.62	0.71
30. Adaptive, supportive equipment and supplies available to the performing arts community	2.29	1.25	2.09	0.72	1.90	0.76
31. Expected behaviors and social pressures related to injury management within the arts organization and the general performing arts community	2.76	1.25	2.25	0.78	2.19	0.76
32. Specific practice/performance requirements of the performer (e.g., aerobic, range of motion, fine motor coordination, skill level)	3.57	0.82	2.73	0.55	2.65	0.62
33. Performer-specific epidemiological injury characteristics (e.g., incidence, mechanism, technique specific, age-related changes)	3.36	0.93	2.64	0.58	2.51	0.68
34. Typical training progressions within various art disciplines	3.23	1.04	2.54	0.58	2.45	0.60
35. Functional and aesthetic demands of various art disciplines	3.36	0.92	2.62	0.54	2.47	0.68
36. Training/performance demands (e.g., workload variation, practice/rehearsal schedules, layoffs)	3.34	1.02	2.58	0.64	2.49	0.68
37. Risk factors associated with over-training (e.g., excessive jump training)	3.34	0.90	2.53	0.66	2.56	0.59
38. Inconsistency between training demands and performance requirements (e.g., anaerobic dance class vs. aerobic performance)	3.04	1.10	2.35	0.76	2.49	0.66

Appendix B (Continued)

Description of Knowledge	Frequency		Criticality		Judgment	
	Mean	SD	Mean	SD	Mean	SD
39. Typical anatomical and physiological characteristics of the performer within specific art disciplines (e.g., excessive ROM)	3.47	0.86	2.54	0.64	2.42	0.69
40. Psychosocial tendencies in performers relative to compliance, body awareness, pain perception, and performance anxiety	3.20	0.95	2.41	0.73	2.39	0.71
41. Impact of anatomical variations (e.g., os trigonum) on performers' impairments	3.09	1.10	2.53	0.70	2.45	0.71
42. Impact of concurrent medical conditions (e.g., amenoria and osteoporosis) on performers' impairments	2.99	1.15	2.40	0.71	2.42	0.66
43. Impact of behavioral health risk factors (e.g., smoking effects on healing rates) on performers' impairments	2.84	1.20	2.14	0.84	2.25	0.63
44. Psychological/emotional conditions typically seen in the performing arts population	3.04	1.19	2.36	0.76	2.24	0.71

Milidonis, MMSc, PT, OCS (Facilitator), Brent Anderson, PT, OCS, Shaw Bronner, MHS, PT, OCS, Michelina Cassella, PT, Gayanne Grossman, PT, Keith Kleven, PT, MS, ATC, Marijeanne Liederbach, MSPT, MS, ATC, Peter Marshall, MA, PT, Lynn E. Meddoff, MA, MPT, Marika Molnar, MA, PT, Nicholas Quarrier, MHS, PT, OCS, Donna Ritter, PT, Jeffrey T. Stenback, PT, OCS; the alternate NAG members, including Eve Colley, PT, Kathi Fairbend, MSPT, Joan Firra, MPT, Jennifer Green, MSPT, Kati Keller, PT, Julnar Rizk, MSPT; Knapp & Associates International; and all physical therapists who participated in the survey.

References

- Bronner S, Ojofeitimi S, Spriggs J: Occupational musculoskeletal disorders in dancers. *Physical Therapy Reviews* 8:57-68, 2003.
- Anderson BD: Cost containment of a professional ballet company through in-house physical therapy. *J Orthop Sports Phys Ther* 29:A-19, 1999.
- Bronner S, Ojofeitimi S, Rose D: Injuries in a modern dance company: Effect of comprehensive management on injury incidence and time loss. *Am J Sports Med* 31(3):365-373, 2003.
- Garrick JG, Requa RK: Ballet injuries: An analysis of epidemiology and financial outcome. *Am J Sports Med* 21(4):586-590; 1993.
- Solomon R, Solomon J, Micheli LJ, McGray E: The "cost" of injuries in a professional ballet company: A five year study. *Med Probl Perform Art* 14:164-169, 1999.
- International Association for Dance Medicine and Science. About IADMS. Mission Statement. Available at: www.iadms.org.
- Performing Arts Medicine Association. Opening Page. Available at: www.artsmed.org.
- Performing Arts Special Interest Group. Orthopaedic Section, Inc. of the American Physical Therapy Association. Opening Page. Available at: www.orthopt.org/sigs/performing_arts_sig/.
- Hagins M: *Dance Medicine Resource Guide* (2nd ed). Andover, NJ: J. Michael Ryan Publishing, Inc., 2002.
- Dunn SV, Lawson D, Robertson S, et al: The development of competency standards for specialist critical care nurses. *Journal of Advanced Nursing* 31(2):339-346, 2000.
- Donato EB, DuVall RE, Godges JJ, et al: Practice analysis: Defining the clinical practice of primary contact physical therapy. *J Orthop Sports Phys Ther* 34(6):284-305, 2004.
- Milidonis MK, Godges JJ, Jenson GM: Nature of clinical practice for specialists in orthopaedic physical therapy. *J Orthop Sports Phys Ther* 29(4):240-247, 1999.
- National Practice Analysis Study Orthopaedic Clinical Specialists in Physical Therapy: Development of a Document Describing Advanced Orthopaedic Clinical Practice (DACP) in Orthopaedics. December, 1993.
- Milidonis MK, Ritter RC, Sweeney JA, et al: Practice analysis survey: Revalidation of advanced clinical practice in orthopaedic physical therapy. *J Orthop Sports Phys Ther* 25(3):163-170, 1997.
- Jensen GM, Gwyer J, Shepard KF, Hack LM: Expert practice in physical therapy. *Phys Ther* 80(1):28-52, 2000.
- Milidonis MK, Godges JJ, Jenson GM: Nature of clinical practice for specialists in orthopaedic physical therapy. *J Orthop Sports Phys Ther* 29(4):240-247, 1999.
- Jones MA: Clinical reasoning in manual therapy. *Physical Therapy* 72(12):875-884, 1992.
- Bryan JM, Geroy GD, Isernhagen SJ: Nonclinical competencies: A survey of occupational health physical therapists. *J Orthop Sports Phys Ther* 19(5):305-311, 1994.
- Bryan JM, Geroy GD, Isernhagen SJ: Nonclinical competencies for physical therapists consulting with business and industry. *J Orthop Sports Phys Ther* 18(6):673-681, 1993.
- Delitto A, Shulman AD, Rose SJ: On developing expert-based decision-support systems in physical therapy: The Niosh Low Back Atlas. *Physical Therapy* 69(7):554-558, 1989.
- American Academy of Orthopaedic Manual Physical Therapists. *Orthopaedic Manual Physical Therapy Description of Advanced Clinical Practice*. Biloxi: AAOMPT, 1998.
- American Board of Physical Therapy Specialties. *Sports Physical Therapy Description of Advanced Clinical Practice*. Alexandria, VA: American Board of Physical Therapy Specialties Council on Orthopaedic Physical Therapy, 1997.
- American Board of Physical Therapy Specialties. *Orthopaedic Physical Therapy Description of Advanced Clinical Practice*. Alexandria, VA: American Board of Physical Therapy Specialties Council on Orthopaedic Physical Therapy, 1994.
- American Physical Therapy Association: *Guide to Physical Therapist Practice* (2nd ed). Alexandria, VA: APTA, 2001.

This is a new feature for the magazine. Every issue we will be interviewing someone who is having an impact on the profession of orthopaedic physical therapy practice, education, or research. If there is a person who you would like us to “shine the spotlight on,” send us the name and contact information of the individual and we will consider the recommendation.

Tom McPoil, PT, PhD, ATC, is currently a Regents Professor of Physical Therapy at Northern Arizona University. He is also an Adjunct Professor in the Division of Physical Therapy at the University of Queensland, in Brisbane, Australia. Tom received his Certificate in Physical Therapy from Children’s Hospital of Los Angeles in 1973 and his Doctor of Philosophy in Kinesiology with a specialization in Biomechanics from the University of Illinois at Urbana-Champaign in 1987. From 1973 to 1983, he was a full-time practitioner treating pediatric, neurological, and orthopaedic patients in a variety of hospital, in-patient rehabilitation, and outpatient settings. In 1983, he started his physical therapy academic career at the University of Illinois, Chicago, and joined the Faculty of Rehabilitation Science at Northern Arizona University in 1988. He was the recipient of the APTA Dorothy E. Baethke & Eleanor J. Carlin Award for Excellence in Academic Teaching and the Orthopaedic Section’s James A. Gould Award for Excellence in Teaching Orthopaedic Physical Therapy. Tom, along with his colleague, Mark Cornwall, received the 2003 Scholl Award for the outstanding manuscript published in the *Journal of the American Podiatric Medical Association*. Tom was the founding President of the Foot and Ankle Special Interest Group and currently, serves as Vice President of the Orthopaedic Section as well as on the Board of Directors for the *Journal of Orthopaedic and Sports Physical Therapy*.

Dr. McPoil, thank you for agreeing to be interviewed for OP. Many of our readers may recognize your work involving foot and ankle biomechanics and the efficacy of foot orthoses.

1. What is your general philosophy regarding the use of foot orthoses?



I have always believed that primary physical therapy intervention is therapeutic exercise that includes: muscle strength, power, and endurance; soft tissue and muscle-tendon flexibility/mobility; and the design of a functional progression of activities to allow the patient or client to return to their job, desired recreational activity, or sport. It is also critical that the functional progression address cardiovascular endurance. That being said, I view foot orthoses as being secondary but often an immediate intervention that allows me to reduce the patient’s level of pain and symptoms so that they can begin a program of therapeutic exercise. In some situations, such as in forefoot pain or metatarsalgia, foot orthoses can be the primary intervention as pressure relief over the site of involvement is essential. But even in these types of cases, where the foot orthotic is the primary intervention, I still think it is critical on the part of the therapist to assess the patient’s gait and posture to observe for possible compensations, address muscle strength issues, especially proximal hip muscle weakness in the presence of a prolonged antalgic or painful gait, as well as flexibility. The key point, in my view as a physical therapist, is that the foot orthotic should not be the ‘centerpiece’ of the treatment program—it should be used to augment the plan of care so that the patient or client can move toward starting their therapeutic exercise program.

2. Are you currently working on any research projects at this time?

For the last 3 years, we have been working on a system to objectively assess foot structure and mobility that is both reliable and valid. At the present time, physical therapy does not have a reliable and valid clinical tool to assess foot posture and mobility, thus the ability to conduct multisite foot and ankle

outcome studies are difficult to say the least. This new system of assessment we have been working on was originally developed for one of the footwear companies that our research lab has done contract work for the past several years. For this particular shoe company, we built a special platform that would allow 4 digital images of each foot to be obtained in less than 8 minutes. In addition, the platform was designed to be extremely sturdy, which permitted the platform to be shipped throughout the US and the around the world. The digital photographs were downloaded into special software that allowed over 24 different measurements of foot shape and mobility to be obtained. This particular footwear company used the platform to obtain foot images at last year’s NFL Combine, as well as in Europe and China. While the platform was a success in the view of the footwear company, in my mind the platform was not very ‘clinician friendly’ as it required about 30 to 45 minutes to analyze the digital images. As a result, we used what we learned from the platform system to design a more portable, clinician friendly system that would allow the examiner to obtain foot and ankle measurements that have a high level of reliability and validity. While we are still in the process of validating the new system, our results to date have been quite promising. One of the research projects I undertook while on my Fulbright Senior Scholar Fellowship at the University of Queensland in Brisbane, Australia, was to use the new system to assess patients diagnosed with patellofemoral pain syndrome as well as in normal subjects. I hope to complete the final validation research on the new system this year so we can begin publishing our findings.

3. What has been your experience with some of the technology that has been used for measuring plantar pressure?

We have used the Novel capacitance pres-

sure technology since 1989. We obtained our first EMED pressure platform system in 1989 and our first PEDAR insole sensor system in 1990, although at that time Novel called the system the MIKRO-EMED insole sensor system. We had originally obtained the platform system to conduct research on diabetic Native Americans living in Arizona. Since serving as a physical therapist at the US Public Health Service Hospital in Carville, LA, which specialized in the management of individuals with Hansen disease or Leprosy, I have had a strong interest in the insensitive foot. We completed that series of studies with Native American diabetics and published several papers based on the data we collected. We initially purchased our insole pressure sensor system for contract work for 2 footwear companies that were interested in investigating the optimal design of shoe insoles or what the footwear industry calls the 'sockliner.' Back in the early 90s, the insole pressure sensors were very fragile and quite susceptible to breaking. Needless to say, Mark Cornwall and I spent many evenings trying to get the sensors to work so we could complete these research projects on time. But, that being said, today the insole systems are much more reliable. One of the other research projects I conducted while working with Dr. Bill Vicenzino at the University of Queensland was the assessment of inshoe plantar pressure data in patellofemoral pain patients using 2 different types of foot orthoses. In light of the research questions we are attempting to address, inshoe pressure sensors provided the best method for collecting the necessary data.

4. Are you currently engaged in clinical practice?

Yes, I am still engaged as much as possible in clinical practice. I teach several clinical-based courses in our Physical Therapy Program curriculum and I strongly believe that as long as I teach these clinical-based courses that I should be engaged in clinical practice to some degree. Since I arrived at Northern Arizona University, I have served as a consultant for foot and ankle problems to our Intercollegiate Athletic Department. As such, I see 4 to 5 athletes in a weekly clinic, in which I evaluate their injury, fabricate orthotics if necessary, and design their exercise program. In an average year, I see about 120 male and female athletes and fab-

ricate roughly 60 pairs of orthotics for those athletes. I also see approximately 2 to 3 private foot and ankle patients per week, which can include anything from seniors with heel pain to high school athletes with lower leg pain. Additionally, I supervise our first year and second year Doctor of Physical Therapy students as they see up to 4 patients per week at our University's Student Health Center. Typically, these student patients have back, knee, or shoulder pain, so this is a great opportunity for me to see patients with areas of involvement other than the foot and ankle.

5. What role does the selection of proper footwear play in preventing injuries?

This is a very difficult question to address since few studies have been able to demonstrate that footwear by itself can prevent injuries. The current literature emphasizes the 'multifactorial' nature of athletic injuries. While footwear is obviously one of the 'factors,' the specific influence of footwear in the development of an injury is difficult to determine when seeing the athlete in the clinic. When a runner comes into the clinic and shows you the shoes he or she is using for their workout and the outsole or upper are extremely worn, it makes good sense that they should be counseled on purchasing another pair of shoes. Obviously, the outsoles of cleated footwear manufactured with materials that have a friction coefficient on specific playing surfaces can lead to traumatic injuries to any of the lower extremity articulations. Furthermore, almost all footwear designed for running will have some features to control foot pronation because much of the anecdotal literature has promoted 'excessive' pronation as a factor in the development of running injuries. Because of a lack of evidence demonstrating that footwear can be a direct cause of overuse injuries, when counseling patients or athletes I tend to focus more on the comfort and fit of the shoes they are using.

6. You have been teaching at Northern Arizona University for a while. Have you seen any differences in the students now entering into physical therapy?

When I started my academic career in 1983 as a member of the physical therapy faculty at the University of Illinois at Chicago, I instructed primarily undergraduate students between the ages of 19 and 21

years, because it was a bachelor's first professional degree. In general, most of these 'college' students were still depending on their parents for some financial support. On occasion, we had an older student who was coming back for a second degree or a student who was married and had children, but these students were the exception rather than the norm. In addition, it was unheard of to think that a student would attempt to be employed and earn an income while they were a student in the program, at least during the academic year. When I arrived at Northern Arizona University in 1988, the program was converting from a bachelor's first-professional degree to a master's first-professional degree program. One of the things that struck me about the very first class I instructed at NAU was the large number of 'older' students in the program who were already married and in many cases had children as well as the fact that at least 50% of the students needed to work throughout the academic phase of the program. While there were still students in their early 20s in the program who had just completed their bachelor's degree, in my mind this was quite a dramatic shift in student demographics. Over the last 17 years, this trend in student demographics has not changed and for most of our students, the dependence on financial aid and outside employment is a 'given' not the exception. This change in student makeup definitely has presented challenges to both myself and my other faculty colleagues. Students today are paying their 'own freight' so to speak and thus, are more demanding of their teachers because like all consumers, they want the best possible product, in this case an education, that they are paying for! This being said, I have been blessed with the opportunity to work with numerous groups of exceptional graduate students since arriving at NAU. One of the primary reasons I have never considered any type of full-time administrative position is that I still have that sense of joy and fulfillment when interacting with students that I first experienced 23 years ago. I am, however, ever cognizant of the challenges that face the physical therapy graduate student of today!

7. You are active within APTA governance. What advice would you give your colleagues who may not be active?

While I enjoyed helping other therapists

to initiate the Foot and Ankle Special Interest Group, it was an honor to be asked to run for the office of Vice President for the Orthopaedic Section. I felt at the time I was asked to consider running for Section office, I could devote the necessary time to the responsibilities of the position and that I could perform the duties of the office without any personal agenda on my part. I strongly believe that when one decides to run for an elected position of any professional organization, it is critical that the individual be willing to serve as a representative for the entire membership of the organization but also represent all facets of orthopaedic physical therapy, irrespective of one's own personal views. The best advice I could give to someone interested in serving our profession, is to consider serving at a point in their life when they can devote the necessary time to the responsibilities of the office they are seeking, as well as be a fair and impartial representative of all those individuals who belong to the Section.

8. Any thoughts on the DPT degree and what challenges a new grad will face in the field?

When I first arrived in Arizona in 1988, even though our graduates earned a Master's degree in Physical Therapy, the Arizona State Physical Therapy Chapter had already worked to gain direct access privileges and by 1994, one third-party payer in Arizona was allowing patients to obtain physical therapy without a physician's referral for up to 20 treatments per year. The point I am trying to make is that the responsibilities for our former graduates with an MPT were no different than for our DPT graduates today! In my opinion, however, the one thing that the awarding of the DPT has done is raise the awareness to the higher level responsibility afforded to new graduates as well as inadvertently raising the bar for judging the performance of new DPT graduates by practicing clinicians whose first-professional degree is either the BSPT or MPT. I remember an intense discussion at one of our Arizona State Physical Therapy Chapter meetings following the graduation of our third DPT class. Several BSPT and MPT clinicians were complaining that our new DPT graduates did not function during their internships at a higher level than previous MPT students. While I could understand the frustration

on the part of these exceptional clinicians who did not have a DPT, I was surprised that these clinicians would expect any entry-level student, whether they graduated with a MPT or a DPT, to demonstrate a different level of clinical performance. While our DPT graduate today definitely has an enhanced didactic education in comparison to the BSPT and MPT, *Physical Therapy* like many other health care professions relies on "clinical experience with constant patient interaction" to fully develop the communication and psychomotor skills which are *second nature* to the experienced clinician. This can only be developed with continued patient care experiences during internships and after entering the workforce. Personally, I know my expectations for the DPT student I instruct today are higher than they were for either the BSPT or MPT student of yesterday. While this may not be fair, I believe that both public and peer performance expectations for the new DPT graduate demand this increased level of performance!

Thanks Tom for taking the time to answer our questions and provide your views.

OPTP has added more ways to learn and apply Mulligan's mobilization techniques. Call or write for a free catalog.

More ways to master Mulligan

Self Treatments for Back, Neck and Limbs: A New Approach is Mulligan's new patient self-help guide featuring: posture, Self-Snag techniques, exercises, taping, and Pain Release Phenomenon techniques.

Mulligan Mobilisation Mitt eliminates the discomfort of contact on bony landmarks, permitting patients to be more relaxed during mobilization.

Mulligan Seating Concept™ keeps the knees below the hips and makes the lumbar lordosis easier to maintain while sitting.

Mulligan 'SELF SNAG' Straps allow the clinician-trained patient to effectively apply joint release to the lumbar and cervical regions of the spine.

OPTP
The Conservative Care Specialists
Phone: (763) 553-0452 Fax: (763) 553-9355 Website: www.optp.com/ad
Free Catalog: 1-800-367-7393
customerservice@optp.com ©2003 OPTP

OPTP features numerous references, resources and products from Brian Mulligan, FNZSP, Dip MT. These products and many more are featured in the newest edition of the OPTP Catalog. Call or write for your copy today, or go to www.optp.com

Smith E, Smith K. *Pilates for Rehab: A Guidebook to Integrating Pilates in Patient Care*. Minneapolis, Minn: OPTP; 2005, 223 pp, illus.

This book is targeted at the rehabilitation therapist wishing to integrate the concepts and methods of Pilates into daily practice with patients. The book is comprehensive, covering a spectrum of topics related to such integration. The opening chapter discusses the history of the Pilates method, as well as an overall rationale for incorporating the techniques into rehabilitation programs. The second chapter highlights more specific muscle groups involved in Pilates exercises and presents an evidence-based discussion for inclusion of these exercises in the rehab setting. Musculoskeletal and functional assessments are discussed in the third chapter as an introduction into designing and implementing core stabilization and strengthening into the traditional rehabilitation program. The fourth chapter communicates the basic principles of Pilates, including breathing, pelvic positioning, scapular control, rib cage positioning, head and neck positioning, motor control, integrative isolation, and mind-body connection.

The authors then go on to present the concepts of basic core stabilization, followed by a 2-chapter overview of the fundamental Pilates exercises, with movement pattern variations and modifications for each. The purpose, various clinical applications, and common faulty movement patterns are also outlined for each exercise. Chapter 8 presents options for adding equipment to specific exercise in order to further challenge and re-train the patient. The use of balls, exercise bands, foam rollers, wooden dowels, balance boards, and other devices are discussed. Safety considerations for use of specific equipment are also presented.

Chapters 9 and 10 delve into the art of instructing and teaching the Pilates exercises. Tactile cueing, word choice, imagery, and other communication strategies are reviewed. Excellent imagery ideas are suggested for teaching patients basic concepts

such as transverse abdominus recruitment and alignment. Each of these imagery ideas is accompanied by an illustration that may be very useful in describing various ideas to patients. The final chapters present a number of case-study examples for use of the techniques described. A section on progression for athletes and preparation for return-to-play is also included.

Each chapter is well cited, with a comprehensive reference. The book includes numerous photographs and illustrations portraying the different exercises and concepts. In addition, it is obvious that the authors draw their information from numerous resources, including Joseph Pilates' traditional teachings, STOTT Pilates, and Polestar Pilates. They present a variety of theories, backgrounds, and modifications from all of these teachings.

Overall, this text is an ample discussion and overview of the integration of Pilates techniques into a physical therapy practice. I would recommend this book for therapists with an interest in Pilates-based rehabilitation interventions, and for students participating in a Pilates certification program.

Amanda Blackmon, DPT



Schuenke M, Schulte E, Schumacher U. *Thieme Atlas of Anatomy, General Anatomy and Musculoskeletal System*. Stuttgart, NY: Thieme; 2005, 541 pp, illus.

This is the first in the series of 3 anatomy books to be published in 2006. This atlas is one of the most impressive anatomy texts that I have read. The book is meticulously detailed, beautifully illustrated, and correlates human anatomy with various clinical applications.

The atlas is divided into 4 major sections: general anatomy, the trunk wall, the upper limb, and the lower limb. More than 3,000 original illustrations are included. Each of the 4 sections is organized into subtopics.

The general anatomy section is divided into 8 subparts including: human phylogeny and ontogeny, overview of the human body, surface anatomy of the body, bones and joints, muscular system, vessel system, lymphatic system and glands, and general neuroanatomy.

In the general anatomy section, a brief overview of human phylogenetic development is presented, and continues with fetal development, progressing to structure and design of the human body. Excellent illustrations and tables support such topics as bone ossification across the lifespan, comparative anatomy, and changes in body proportions during growth. The authors added a section on principles of joint mechanics to integrate structure with function. The section continues with an overview of the basic musculature, cardiovascular and lymphatic systems, and general neuroanatomy.

The trunk wall, upper limb, and lower limb sections are divided into 5 subsections including: (1) bones, ligaments, and joints; (2) muscle function; (3) muscular topographical anatomy; (4) neurovascular forms and relationships; and (5) neurovascular topographical anatomy.

The bones, ligaments, and joints section of each system is described in detail. Specific detail is given to the attachment sites of all ligaments and joints in each of the trunk wall, upper and lower limb, as well many important facts including gender differences. Also, special mention is noted to the convexity or concavity of each joint. Osteokinematic movements and joint mechanics are also listed at each joint with tables listing average range of motions.

In the muscle function section an overview of each muscle is described in a well-organized table. Each muscle is listed individually with its origin, insertion, action, and innervation. There is also a discussion in each section on the function of each muscle group and how they integrate with other muscle groups. In the topographical anatomy section group muscle function is described.

The neurovascular systems: forms and

relations section details the anatomy and relationships to one another of arteries, veins, lymphatic system, and nerves—both motor and sensory—with excellent illustrations and tables. Potential body changes following neurovascular lesions are listed. The topographical neurovascular systems section describes surface anatomy in relation to the various structures.

Special clinical considerations are also included in each section. For example, there are discussions of degenerative disc disease, shoulder impingement, and knee meniscus tears in the trunk, upper limb, and lower limb sections, respectively.

The strengths of this atlas are the excellent illustrations, the easy to read tables, and the emphasis on the relationship of structure to function. The authors skillfully present the material in a clear, concise manner.

I would recommend this text to physical therapy students and as a reference for clinicians in various practice settings. Also, the illustrations would be useful for patient education.

David M. Nissenbaum, MPT, MA, LAT

Fredericson M, Yamamoto TLS, Fadil M: *Foam Roller Techniques for Massage, Stretches, and Improved Flexibility*. Minneapolis, Minn: OPTP Publishers; 2005, 42 pp, illus.

This booklet illustrates techniques for self-massage and stretching using several

products available through the OPTP Company. The Introduction describes benefits of performing these techniques using these products. General guidelines are described on the use of the foam roller, and precautions on avoiding bruising and soreness are noted. The authors claim that regular self-massage treatments using the foam roller "...can increase flexibility, decrease muscle tension and pain, improve performance, and help prevent injury." They also state that "Consistent treatments can completely eliminate the painful trigger point and help restore normal muscle function." There are no references cited to support these statements.

Massage and stretching techniques are described for 21 areas of the body, beginning with the upper neck and ending with the feet. Black and white photos demonstrate each technique, supplemented with illustrations showing the area of the body affected by the techniques and the muscles highlighted in red. Most of the massage and stretching techniques demonstrate how to use a particular OPTP product: small ball, foam roller, stability ball, stretching strap, and slant board. The 'small ball massage' techniques for the neck appear to be helpful for promoting active movement and gentle stretching of the muscles and joints of the neck; however as described, these techniques do not fit the classic definition of 'massage.' The 'foam roller massage' techniques also appear to facilitate active motion and stretching of various parts of the body, although the use of the term 'massage' implies that the mechanical pressure of the roller on the soft tissues of the body is producing benefits

similar to classic massage techniques. No references are provided to support the implication that the use of a small ball or foam roller provides therapeutic effects similar to classic massage techniques. The foam roller, large exercise (stability) ball, and stretching strap are described for facilitation of stretching techniques. Each technique is demonstrated in a photo with an accompanying description. Some of the techniques include notes on safe performance to avoid injury. Most of the techniques described are appropriate for self-stretching and could be included in a home stretching program. Physical therapists will know to use the lower neck stretching technique cautiously because the technique shown will stretch the neural tissue of the brachial plexus and nerve roots and may intensify symptoms of a plexopathy or radiculopathy. The technique demonstrated for stretching the hamstrings in the kneeling position will need to be modified by maintaining a lumbar lordosis during the stretch to limit the flexion stretch on low back.

This booklet can be a useful guide as part of a home self-stretching program. The primary intent of the booklet appears to be instruction on how to use the products shown in the photographs. The benefits stated by the authors of using the small ball and foam roller for 'massage' is not supported by references.

Thomas P. Nolan Jr., PT, MS, OCS

webwatch

<http://blog.evidenceinmotion.com>

This blog/RSS feed driven site is a hybrid of information concerning the following topics:

- (1) Consultation and educational/training courses, offered by the site owners.
- (2) Fellowship training.
- (3) Web-based information in the form of blog, podcasts, downloadable PDA tools, newsfeeds, etc.

Other features include a **Clinical Consult service where visitors can read and post clinical questions/replies, information for consumers, and clinical and product advertisements.** According to their webpage the bloggers (Larry Benz, John Childs, Timothy Flynn, and Robert Wainner) aspire to create and promote a culture of excellence that fosters the sharing of information and ideas to facilitate the translation of evidence into practice.



Provided is a brief synopsis of the 'State of the Section's Finances.' The figures for 2004 and earlier, rounded off and presented here are taken from audits report produced by the accounting firm, Gillette and Associates of La Crosse, WI, that performs a full audit of the Orthopaedic Section's finances and financial procedures each year.

• Pertinent Orthopaedic Section Financial Information from the Recent Past:

Total Assets as of December 31, 1999:	2,816,000
Total Assets as of December 31, 2000:	2,584,000
Total Assets as of December 31, 2001:	2,219,000
Total Assets as of December 31, 2002:	2,017,000
Total Assets as of December 31, 2003:	2,259,000
Total Assets as of December 31, 2004:	2,351,000
Total Loss in Assets Jan 1999-Dec 2002:	(799,000)
Total Gain in Assets Jan 2003-Dec 2003:	242,000
Total Gain in Assets Jan 2004-Dec 2004:	92,000

The above figures substantiate that after 3 lean years of deficit spending, the tide has turned in recent years. Although the audited figures for 2005 are not yet available, it was also a positive year. The Income to Expense comparison table below outlines our recent history and shows that we made a significant drop in our expenses in the past 2 years. This drop was primarily due to cost cutting measures carried out by our staff at the Section. Major compliments are due to Terri DeFlorian, Tara Fredrickson, Sharon Klinski, Kathy Olson, and Carol Denison.

• Income/Expense Comparisons

	Income	Expenses
1999	1,441,000	1,435,000
2000	1,297,000	1,493,000
2001	1,241,000	1,405,000
2002	1,196,000	1,246,000
2003	1,173,000	1,245,000
2004	1,176,000	1,134,000
2005	1,447,000	1,128,000

Our major income sources and recent history are provided below:

• Income from Members' Dues:

Jan to Dec 31, 2000:	\$512,000
Jan to Dec 31, 2001:	\$541,000
Jan to Dec 31, 2002:	\$549,000
Jan to Dec 31, 2003:	\$568,000
Jan to Dec 31, 2004:	\$568,000
Jan to Dec 31, 2005:	\$591,000

• Investment Income:

Investment (Dividend) income in 2000:	\$111,000
Investment (Dividend) income in 2001:	\$ 25,000
Investment (Dividend) income in 2002:	\$ 16,000
Investment (Dividend) income in 2003:	\$ 11,000
Investment (Dividend) income in 2004:	\$ 13,000
Investment (Dividend) income in 2005:	\$ 31,000

• Independent Study Courses Registration Income:

Registration – HSC – income in 2000:	\$604,000
Registration – HSC – income in 2001:	\$438,000
Registration – HSC – income in 2002:	\$269,000
Registration – HSC – income in 2003:	\$290,000
Registration – HSC – income in 2004:	\$335,000
Registration – HSC – income in 2005:	\$411,000

The long-range financial goal of the Finance Committee and the Board of Directors is to rebuild our assets to ensure that we are able to optimally accomplish the practice, research, and education goals of our Section. For example, in 2005 we have added \$300,000 to our Section's Research Endowment Fund to enable the Section to make consistent and substantial annual contributions to research activities from the income generated by this fund.

The steps we are taking to achieve our long-range financial goals continue to be the obvious plan of (1) improving our operating efficiency, and (2) generating more income. To improve efficiency, the staff at the Section's office has implemented strategies to focus our resources (primarily human resources) toward accomplishing objectives with the highest priority on our strategic plan while at the same time, reduce costly, lower priority items. We have continued to have the Section's Committees and SIGs follow this lead and review their practices, policies, and procedures asking "is this process that we spend time and energy doing actually useful?" That is, does it truly contribute to our mission of practice, research, and education. This policy and procedure review process will continue in the upcoming years.

Our current income generating strategies are to (1) provide outstanding service and an excellent benefit package that maintains or gains members, (2) offer the highest quality, cutting-edge professional education in our independent study courses and conference programming, (3) optimize our real estate and stock market investments and rental income activities, and (4) foster the innovation of other income generating strategies.

In summary, I am happy to report that our Section has generated substantially more income than it has spent in the past 2 years. This has allowed our Section to pay off its loans and contribute to its Research Endowment Investment Fund.

CSMawardrecipients

Awards were presented at the 2006 Combined Sections Meeting in San Diego

STUDENT AWARD

The purpose of this award is to identify a student physical therapist (first professional degree) with exceptional scholastic ability and potential for contribution to orthopaedic physical therapy. The eligible student shall excel in academic performance in both the professional and pre-requisite phases of their educational program, and be involved in professional organizations and activities that provide the potential growth and contributions to the profession and orthopaedic physical therapy.



Kimiko receives the 2006 Student Award.

Kimiko Yamada received her Bachelors of Science degree in Biology from the University of Hawaii in Manoa, Hawaii. She will graduate in May 2006 from the Doctor of Physical Therapy (DPT) program at the University of Southern California. The mission of the University of Southern California's DPT program is to educate authoritative practitioners and future leaders in the profession of physical therapy. Ms. Yamada embraced this mission wholeheartedly through her pursuit of excellence in both the classroom and clinical environments. In addition to balancing the demands of her professional program, Kimiko has also taken an active role in clinical research serving as the Study Coordinator for a multi-center randomized clinical trial related the management of post-microdiscectomy patients in the Greater Los Angeles area. In quoting one of her professor's "Kimi personifies the

type of individual who should be held as an example of the best USC has to offer." One of her student colleagues notes that Kimiko is a stellar student who excels in all that she does and is an exceptional team player. Another one of her professor's notes that "She is certainly the kind of clinician I would like to treat me." It is obvious that Kimiko Yamada is truly an outstanding student and a most worthy recipient of the Outstanding Student Award, with a tremendous potential to contribute to the Orthopaedic Section of the APTA.

JOURNAL OF ORTHOPAEDIC & SPORTS PHYSICAL THERAPY AWARDS

2005 JOSPT Excellence in Research Award

Presented to: Cathy M. Arnold, PT, MSc; Angela J. Busch, MSc; Candice L. Schachter, DPT, PhD, MHK, BA; Liz Harrison, BPT, PhD, MSc; and Wojciech Olszynski, MD, PhD, FRCPC

2005 George J. Davies – James A. Gould Excellence in Clinical Inquiry Award

Presented to: Reg B. Wilcox III, PT, DPT, MS; Linda E. Arslanian, PT, DPT, MS; and Peter J. Millett, MD, MSc

JAMES A. GOULD EXCELLENCE IN TEACHING ORTHOPAEDIC PHYSICAL THERAPY AWARD

This award is given to recognize and support excellence in instructing OPT principles and techniques through the acknowledgement of an individual with exemplary teaching skills. The instructor nominated for

this award must devote the majority of his/her professional career to student education, serving as a mentor and role model with evidence of strong student rapport. The instructor's techniques must be intellectually challenging and promote necessary knowledge and skills.



Congratulations Tara Jo, recipient of the 2006 Excellence in Teaching Award.

Tara Jo Manal, PT, MPT, OCS, SCS is the 2006 recipient of the James A. Gould III Excellence in Teaching Orthopaedic Physical Therapy Award. Mrs. Manal is the Director of Clinical Services as well as the Director of the Orthopaedic Physical Therapy Residency Program at the University of Delaware Physical Therapy Department. In these capacities she epitomizes the role of a teacher, mentor, clinician, and clinical researcher in a nationally recognized professional program.

Since joining the Physical Therapy Department at the University of Delaware, Tara Jo Manal has served as an instructor in all facets of the academic program. She has been an instructor in the *Musculoskeletal Evaluation and Treatment* as well as the *Kinesiology* course for more than a decade. Her peers state that her lectures are comprehensive and provide students with a 'best practice' model so that they can apply the information clinically. She uses case scenarios for her students, whenever possible, to demon-

strate the clinical relevance in strategies for both evaluation and intervention. As noted by one of her colleagues “her tireless efforts to offer students in the curriculum the best evidence-based practice in orthopaedics and sports have resulted in the model of how the clinical and didactic aspects of education can be integrated into a physical therapy curriculum.”

Both current and former students speak highly of Mrs. Manal’s dedication and knowledge in the area of musculoskeletal physical therapy. One student states, “Her energy, wisdom, thirst for knowledge, professional skills, and genuine concern for her students makes her a teacher and clinician any university would be lucky to have.” Another former student writes “It has been an honor to learn from Mrs. Manal and I am sure that all of her current students are better physical therapists today because of the influence she had on all of us.”

It is obvious that Tara Jo Manal is a most worthy recipient of the James A. Gould Excellence in Teaching Orthopedic Physical Therapy Award. With this Award, Tara Jo Manal joins a distinguished group of faculty and clinical mentors in orthopedic physical therapy.



ROSE EXCELLENCE IN RESEARCH AWARD

The purpose of this award is to recognize and reward a physical therapist who has made a significant contribution to the literature dealing with the science, theory, or practice of orthopaedic physical therapy. The submitted article must be a report of research but may deal with basic sciences, applied science, or clinical research.

The recipient of the 2006 Rose Excellence in Research Award is **John D. Childs, PT, PhD, MBA, OCS, FAAOMPT** for a manuscript entitled, A clinical prediction rule to identify patients with low back pain most likely to benefit from spinal manipulation: A validation study. *Ann Intern Med* 2004; 141:920-928. The co-authors of this article are Julie M. Fritz, PT, PhD, ATC; Timothy W. Flynn, PT, PhD, OCS; James J. Irrgang, PT, PhD, ATC; Maj. Kevin K. Johnson, PT; Maj. Guy R. Majkowski, PT, MPT, OCS;



The 2006 Rose Excellence in Research Award Winners. (L-R) Julie Fritz, John Childs, Jay Irrgang, Tim Flynn, Maj. Kevin Johnson, and Anthony Delitto; not present, Maj. Guy Majkowski.

and Anthony Delitto, PT, PhD, FAPTA.

Dr. Childs is an Assistant Professor and Director of Research in the U.S. Army-Baylor University Doctoral Program in Physical Therapy and an Assistant Professor in the U.S. Army-Baylor Postprofessional Doctoral Program in Orthopaedic and Manual Physical Therapy. He is a board-certified Orthopaedic Clinical Specialist from the American Board of Physical Therapy Specialties and a Fellow in the American Academy of Orthopaedic and Manual Physical Therapists. Dr. Childs completed his PhD in Rehabilitation Science and Master of Science in Musculoskeletal Physical Therapy from the University of Pittsburgh in 2003, a Masters of Business Administration from the University of Arizona in 2000, and a Master of Physical Therapy from the U.S. Army-Baylor University in 1996. Dr. Childs has made numerous scientific presentations at state, national, and international meetings and has lectured extensively at the graduate and postgraduate levels on evidence-based practice, advanced clinical examination techniques, and manual physical therapy. He maintains an active research agenda in the areas of subgrouping patients with low back and neck pain, spinal and extremity manipulation, characterization of spinal instability, and the development of clinical prediction rules. He has re-

ceived numerous research grants from federal and professional funding agencies, including the Department of Defense, Foundation for Physical Therapy, and the Orthopaedic Section of the American Physical Therapy Association. Dr. Childs has published over 30 peer-reviewed manuscripts and 60 abstracts related to orthopaedics, biomechanics, and manual physical therapy in leading peer-reviewed journals. He is currently an Associate Editor for the *Journal of Orthopaedic and Sports Physical Therapy* and is Treasurer of the American Academy of Orthopaedic and Manual Physical Therapists. Awards include being the Physical Therapy Journal’s Reviewer of the Year, 2-time recipient of the American Academy of Orthopaedic Manual Physical Therapists’ Excellence in Research Award, Texas Physical Therapy Association’s Outstanding Research Platform, and the Air Force Physical Therapist of the Year. Dr. Childs is the co-developer of the Evidence in Motion blog and is the founder and President of Evidence in Motion, an education and business practice consultation company committed to the advancement of evidence-based physical therapy practice, research, and education.

Restore the Cervical Spine... and Advance your Practice.

MCU[™]
Multi-Cervical Unit



From advanced technology comes an advanced clinic.

- > Help neck injury patients achieve **60% improvement in 6 weeks or less**, treating the cause of the pain, not merely the symptoms.
- > **Increase your revenues** by targeting a large market – become a leader of cervical spine rehab in the eyes of insurers and local referral sources.
- > Contact BTE Technologies today to learn more about how to advance your practice with the MCU... and take advantage of our **\$10,000 trade-in offer**.



www.btetech.com | 800.331.8845



PAINFUL PROBLEMS. SIMPLE SOLUTIONS.

THE ORIGINAL INDEX KNOBBER® II

For the hands on professional to apply sustained and precise pressure to trigger points.



THE ORIGINAL ORBIT MASSAGER

For a stress releasing, relaxing massage to muscles throughout the body.



THE ORIGINAL BACKNOBBER® II

There are reasons why the Original Backnobber® II is the most popular and sought after self care, deep muscle therapy tool on the market today.

- Instant access to trigger point pain
- Ergonomic design
- Easy to use
- Comes apart for convenient storage and travel
- 35 page, illustrated guide book provides a complete patient self care program
- Available in blue, black, green and purple
- Lifetime guarantee

**Place your order today –
Free Orbit Massager with first wholesale order!**

Call toll free 800.603.5107 for a free product catalog.
Health professional, wholesale pricing available.

We are happy to answer any questions you have about our products.
TOLL FREE: 800.603.5107 • PHONE: 610.754.6204 • FAX: 610.754.6327
E-MAIL: info@pressurepositive.com • WEB: www.pressurepositive.com



FLEXTEND®-AC

Upper Extremity Prevention & Rehabilitation

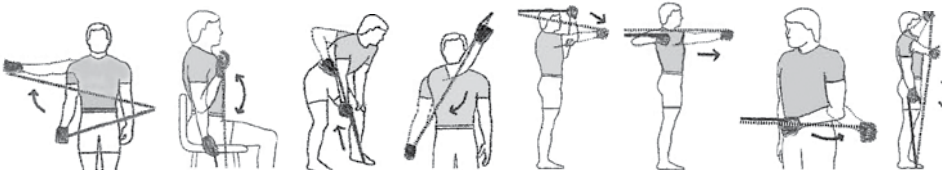
“There is no other device on the market besides FLEXTEND® which properly addresses this serious musculoskeletal disorder (RSI’s).”

Dr. John Medeiros, PT, PhD

FLEXTEND® - AC IS USED FOR THE FOLLOWING:

- Carpal Tunnel Syndrome
- Repetitive Strain Injuries
- Thoracic Outlet Syndrome
- Sports Injuries
- Trigger Finger
- Medial/Lateral Epicondylitis
- Guyon’s Syndrome
- Short Flexor Tendons
- Postural Disorders
- Osteoarthritis
- Shoulder Impingement
- Tendonitis
- Joint Instability
- AC Joint Injuries
- Postural Disorders
- Soft Tissue Injuries
- Post Surgery Rehabilitation
- Assistive Training Exercises

Toll-Free: (800) 874-0801
Web: www.flextend.com



“For patients with CTS and other Repetitive Strain Injuries, my success rate using FLEXTEND® is nearly 100%.”

Dr. Linda Harries

“We are amazed with the immediate and long lasting results our patients experience while using FLEXTEND®.”

Blue Mountain Valley PT

- Fast Results
- No Gripping Required
- Over 90% Success Rate
- High Patient Compliancy
- 50+ Therapeutic Exercises
- Covered by Insurance & Workers Compensation





CSM BOARD OF DIRECTOR'S MEETING MINUTES

FEBRUARY 3, 2006

Michael Cibulka, President, called a regular meeting of the Board of Directors of the Orthopaedic Section, APTA, Inc. to order at 6:00 PM Pacific Time on Friday, February 3, 2006.

Present:

Michael Cibulka, President
Tom McPoil, Vice President
Jay Irrgang, Director
Bill O'Grady, Director
Kelley Fitzgerald, Research Chair
Ellen Hamilton, Education Chair
Bob Rowe, Practice Chair

Absent:

Joe Godges, Treasurer
Lori Michener, (invited guest)
Steve Levine, APTA Board Liaison

Tara Fredrickson, Executive Associate
Terri DeFlorian, Executive Director
The meeting agenda was approved as written.

The January 12, 2006 Board of Directors Conference Call Meeting minutes were approved as written.

The meeting agenda was approved as amended.

Mike Cibulka reported that the CSM Program 22 task force would further investigate the issues and report back to the APTA Section Presidents.

=MOTION 1= Mr. O'Grady moved that the Section office staff pursue the feasibility of building a one story structure contingent upon discussions with Galileo (one of our current tenants) about moving to the second floor of our existing office building. ADOPTED (Mike Cibulka – For; Tom McPoil – For; Joe Godges – Absent; Jay Irrgang – For; Bill O'Grady – For)

=MOTION 2= Mr. Irrgang moved that the Section pay Joy MacDermid one day lodging and airfare in addition to the \$1,000 honorarium already approved by the Board of Directors. ADOPTED (Mike Cibulka – For; Tom McPoil – For; Joe Godges – Absent; Jay Irrgang – For; Bill O'Grady - For)

=MOTION 3= Mr. McPoil moved that the Orthopaedic Section disband the Public Relations/Marketing Committee with the responsibilities to be conducted by the Section office with member input as requested. ADOPTED (Mike Cibulka – For; Tom McPoil – For; Joe Godges – Absent; Jay Irrgang - For; Bill O'Grady – For)

=MOTION 4= Mr. McPoil moved that the following be added to the Awards policy –
Gould Award

ix. Resubmission of Award Packet

- i. Nomination packets for the Gould Award that are considered will be considered by the Awards Committee are eligible for resubmission in the following year's Awards Program. The Orthopaedic Section APTA Awards Committee will retain the original nomination packet until October 1 of the year in which the nomination was originally considered. Nominators should contact the Orthopaedic Section Awards Committee Chair by October 1, if interested in re-submitting the original nomination packet for consideration.

ADOPTED (Mike Cibulka – For; Tom McPoil – For; Joe Godges – Absent; Jay Irrgang – For; Bill O'Grady – For)

=MOTION 5= Mr. McPoil moved that the following be added to the Awards policy –

Paris Award

x. Resubmission of Award Packet

- Nomination packets for the Paris Award that are considered will be considered by the Awards Committee are eligible for resubmission in the following year's Awards Program. The Orthopaedic Section APTA Awards Committee will retain the original nomination packet until October 1 of the year in which the nomination was originally considered. Nominators should contact the Orthopaedic Section Awards Committee Chair by October 1, if interested in re-submitting the original nomination packet for consideration.

ADOPTED (Mike Cibulka – For; Tom McPoil – For; Joe Godges – Absent; Jay Irrgang – For; Bill O'Grady – For)

The Board of Directors tabled discussion related to giving monetary support for a reception honoring Stanley Paris at Annual Conference 2006 for receiving the Mary McMillian Award to their next Board meeting.

Tom McPoil reported that the Board of Directors needed to start thinking about the process for the ISC Editor Search. The position ad was reviewed and the Board decided to possibly add something about incorporating more technology. This will be done by the ISC Board Liaison and brought back to the Board for another review at their next meeting.

Tom McPoil was charged by the Board of Directors to determine the make up of the ISC Editor search committee and bring back to the next Board meeting for approval.

Tom McPoil reported that the Section on Women's Health (SOWH) approached the Orthopaedic Section office to submit



CSM BOARD OF DIRECTOR'S MEETING MINUTES, Con't.

FEBRUARY 3, 2006

a contract to publish their home study course series in 2006. The Board of Directors charged the Section office to develop a contract.

The Board of Directors discussed the role of Section staff at CSM. It was decided that this should be incorporated into the budget process each year based on need. It was suggested that the Managing Editor for ISCs, Kathy Olson, attend the 2007 CSM and then

possibly every other year after that.

The next Board of Directors Meeting was not discussed.

The meeting adjourned at 7:40 PM Pacific Time.

Submitted by Terri A. DeFlorian, Executive Director



CSM BOARD OF DIRECTOR'S MEETING MINUTES

FEBRUARY 3, 2006

Michael Cibulka, President, called a regular meeting of the Board of Directors of the Orthopaedic Section, APTA, Inc. to order at 8:00 PM Pacific Time on Friday, February 3, 2006.

Present:

Michael Cibulka, President
Adam Smith, Membership Chair
Tom McPoil, Vice President
Mary Ann Wilmarth, ISC Editor
Joe Godges, Treasurer
Chris Hughes, OP Editor
Jay Irrgang, Director
Rob Landel, OSC Chair
Bill O'Grady, Director
Rick Watson, PR/Marketing Chair
Kelley Fitzgerald, Research Chair
Steve Paulseth, FASIG
Ellen Hamilton, Education Chair
Tara Jo Manal, PASIG
Bob Rowe, Practice Chair
Jeff Stenback, PASIG

Joe Kleinkort, PMSIG
Lori Michener, (invited guest)
Amy Hesbach, APTSIG
Steve Levine, APTA Board Liaison
Tara Fredrickson, Executive Associate
Terri DeFlorian, Executive Director

The meeting agenda was approved as written.

=MOTION 1= Mr. McPoil moved to approve funding in 2006 for

Absent:

Leza Hatch, Nominating
Deborah Lechner, OHSIG

a 3 monograph course on diagnostic imaging proposed by Roger Biterman, author. **ADOPTED** (unanimous)

Mr. Fitzgerald reported that individuals who have been funded for Orthopaedic Section research grants in the past are coming back asking to be funded again. The Board of Directors charged the Research Committee to look into the possibility of the Section funding these individuals in addition to the current grant funding and bring their proposal back to the Board for approval at their meeting.

The following motion was tabled to the next meeting of the Board of Directors –

=MOTION 2= Mr. Irrgang moved to approve the plan developed by the PR/Marketing Chair outlining how to market ISCs to hospitals, chapters, and academic institutions on CD.

=MOTION 3= Mr. Godges moved that the Orthopaedic Section adopt the Animal Physical Therapy SIG strategic plan. **AD- OPTED** (unanimous)

=MOTION 4= Mr. Godges moved that the Orthopaedic Section Board of Directors charge the Orthopaedic Specialty Council to recommend to ABPTS standards for recognition of OCS that are equivalent to the standards required of APTA recognized clinical residencies. **DEFEATED** (unanimous)

The next Board of Directors Meeting was not discussed.

The meeting adjourned at 9:45 PM Pacific Time.

Submitted by Terri A. DeFlorian, Executive Director



CSM 2006 ANNUAL MEMBERSHIP MEETING MINUTES

FEBRUARY 3, 2006

DRAFT=====MINUTES=====DRAFT

I. CALL TO ORDER AND WELCOME – President, Michael Cibulka, PT, DPT, MHS, OCS

- A. The agenda was approved as printed.
- B. The Annual Membership Meeting minutes from CSM in New Orleans, Louisiana on February 26, 2005 were approved as printed in Volume 17:1:05 issue of *Orthopaedic Physical Therapy Practice*.
- C. Orthopaedic Section Election Results – Nominating Committee Chair, Leza Hatch, PT, MSPT, MA, OCS
For the Fall 2005 election there were 537 ballots returned. The number of invalid ballots was 4, the total number of ballots sent was 14,292, and the return rate was 4%. This return rate was about the same for the on-line ballot as well as the mail ballot. This was a relatively low return rate despite sending 2 separate e-mail blasts to the membership in November reminding them to vote. For the 2006 election we will again send out e-mail blasts but then also add a postcard mailing to the membership reminding them to vote.

The following positions were elected: Director, James Irrgang; Nominating Committee Member, Paul Howard.

The floor was opened for nominations for next year's elections for President, Vice President, and Nominating Committee Chair. No nominations were received from the floor for the position of President. One nomination was received from the floor for the position of Vice President. That nomination was for Tom McPoil. No nominations were received from the floor for the position of Nominating Committee Member.

The deadline for accepting nominations is September 15, 2006.

II. INVITED GUESTS

- A. Dennis Langton, PT-PAC Chairman, gave an update on

the PT-PAC fund raising efforts, specifically that the PAC is now working on expanding their base supporters so that more people are contacted to give something.

- B. Nancy White, PT, MS, OCS, gave an update on the Clinical Research Network through the Foundation.
- C. Fran Welk, PT, DPT, MEd, gave an update on the APTA POPTS Task Force which is now being referred to as the Referral-for-Profit Task Force.

III. BOARD OF DIRECTOR REPORTS

- A. Michael Cibulka, President, reported that there has been a task force appointed by the Section Presidents to look into the CSM Program 22 finances. The members of the task force are Michael Cibulka, Barbara Connelly, Teri Bielefeld, and Roger Herr. The task force is looking at the CSM finances and working on developing a new contract for the Sections for CSM. The current CSM contract has not been reviewed by the Sections since 1994, which has created some confusion in the interpretations of the contract.
- B. James Irrgang, Director, reported on a new project the Section is undertaking which will be a significant member benefit. There is a model of international classification and function which the Section will use to develop a classification system and with this classification system develop evidence-based practice guidelines for some of the more common musculoskeletal conditions. These would be available to our members to assist them in their clinical practice. More on this can be found on the Orthopaedic Section web site (www.orthopt.org).

A moment of silence was observed in honor of Florence Kendall.

Reports from Committee Chairs, and SIG Presidents are located on the Orthopaedic Section web site (www.orthopt.org).

ADJOURNMENT 10:45 AM

Comprehensive Lymphedema Management.



Manual Lymph Drainage and Complete Decongestive Therapy

Certification Classes

This 135 hour / 2 week course includes a textbook (below), course manual, set of bandage materials and more. The following workshops are part of this course: billing, coding genital & pediatric lymphedema, wound care and more.

Lymphedema Management Seminars

The 31 hour / 4-day seminar includes course manual, set of bandages, fitter certification, and more.

Courses Are Offered Throughout The U.S.

Ongoing Support For Our Graduates

Free online therapist listing and patient referral, free assistance with patient problems, informative mailings, biennial refresher conferences, supply with all the necessary bandaging and lymphedema management materials.

CEU's

All courses and seminars are approved for CEU's. Call for a free brochure.

ACADEMY OF LYMPHATIC STUDIES

Over 20 Years of Teaching Excellence; Extensive Faculty



Textbook on Lymphdema Management by J. Zuther
Included in Certification Courses.

Call or visit our website for more information, a class schedule or to purchase the textbook or supplies

800-863-5935 - www.acols.com



Guenter Klose
MLD/CDT Certified Instructor
(since 1987)

THE WAY TO ADVANCE YOUR CAREER IS KLOSE!

EDEMA MANAGEMENT ESSENTIALS (EME) COURSES

This three day intensive course is designed to:

- Provide essential knowledge and skills in edema management and wound care
- Include a comprehensive introduction to the current management of lymphedema

EME is a comprehensive approach to successfully treat sub-acute, post surgical, post traumatic and dependent stroke edema. Edema management is essential to facilitate wound healing of venous leg wounds and other edematous wounds.

No prior lymphedema certification is required.

ADDITIONAL CONTINUING EDUCATION COURSES

These courses provide an excellent opportunity to advance your CDT treatment skills, collect continuing education credits as well as network with other experienced therapists.

Our course offerings include:

- **Lymphedema Therapy Certification Courses** - The highest quality MLD/CDT training available in the US.
- **Kinesio Taping for Lymphedema** - Effectively apply Kinesio Tape for Lymphedema and on hard to bandage areas.
- **Head & Neck Lymphedema Management Course** - additional knowledge of the treatment of Head & Neck lymphedema.
- **CDT Advanced and Review Course** - One week - English speaking class at the Foeldi Clinic in Germany.

EME COURSES 2006*

Boston, Massachusetts
Massachusetts General Hospital
April 21 - 23, 2006

Boulder (Longmont), Colorado
Longmont United Hospital
May 5 - 7, 2006

Pittsburgh, Pennsylvania
HealthSouth Hospital of Greater Pittsburgh
June 9 - 11, 2006

Bangor, Maine
Eastern Maine Medical Center
October 13 - 15, 2006

*Courses are approved for CEU's by the IPTA and the NCBTMB.

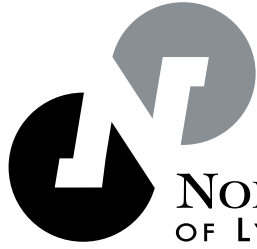
KLOSE TRAINING & CONSULTING, LLC
LYMPHEDEMA THERAPY CERTIFICATION COURSES

110 Highway 35
Red Bank, New Jersey 07701

Toll free: 866-621-7888
Telephone: 732-530-7888
Fax: 732-530-2802

E-mail: info@klosetraining.com

www.klosetraining.com



NORTON SCHOOL
OF LYMPHATIC THERAPY

(866) 445-9674 Toll-Free
info@NortonSchool.com
www.NortonSchool.com

ACCREDITED LYMPHEDEMA THERAPY TRAINING COURSES



**the premier school
for
lymphedema education**

The Norton School of Lymphatic Therapy is the premier educational institution for training medical doctors, physical therapists, physical therapist assistants, occupational therapists, certified occupational therapy assistants, nurses, and massage therapists to become experts in the treatment of pathologies related to the lymphatic system. Taught by the finest and most experienced faculty in the field, Norton School students receive thorough and rigorous training in the Foeldi Method of Complete Decongestive Therapy (CDT), the therapeutic system regarded as the "Gold Standard" for the treatment of lymphedema by the International Society of Lymphology (ISL). Students become qualified to treat lymphedema, lipedema, phlebo-lymphostatic edema, chronic venous insufficiencies, and post traumatic edema. Additionally, as graduates fully certified in the treatment of lymphedema, Norton School alumni are eligible to sit for the LANA (Lymphology Association of North America) national certification exam for lymphedema therapists.

Certification Course

Students are trained in the four components of Complete Decongestive Therapy. Upon completion of the class, the therapist is able to differentiate between a variety of peripheral edemas as well as understand the applications, medical indications, and contraindications of MLD and CDT. The therapist is also able to establish a CDT treatment plan for individuals with primary or secondary lymphedema and perform the indicated treatment. Class topics include: (1) anatomy, physiology, and pathophysiology of the lymphatic system; (2) basic techniques and sequences of Manual Lymph Drainage (Vodder technique); (3) indications and contraindications of Manual Lymph Drainage (MLD) and Complete Decongestive Therapy (CDT); (4) differential diagnosis; (5) treatment of primary and secondary lymphedema; (6) lymphedema bandaging techniques for upper and lower extremities; (7) remedial lymphedema exercises; (8) hygienic skin and nail care for lymphedema; (9) measuring and fitting techniques for lymphedema support garments; (10) patient evaluation and weekly measurement; (11) home maintenance and self-treatment for lymphedema; (12) medical billing and reimbursement for clinical lymphedema management. This course meets the qualifications of the Lymphology Association of North America (LANA) for further LANA Certification in Lymphedema Therapy and is accredited by the Florida Physical Therapy Association for CEUs.

Introductory Course

The Norton School two-day introductory course is offered for the professional seeking clear and concise information regarding current treatment methods for lymphedema and career opportunities within the field. Following this introduction to the "International Gold Standard" treatment method known as Complete Decongestive Therapy (CDT), students will be better prepared to assess the value of more comprehensive certification training with respect to their individual goals for professional advancement.

Advanced & Review Courses

These Norton School two-day courses serve as comprehensive review of the principles and applications of Manual Lymph Drainage and Complete Decongestive Therapy techniques on a theoretical basis, support participants in deepening current theoretical understanding behind MLD/CDT clinical techniques, review and refresh techniques utilized in patient care, advance current understanding of lymphedema as a disease process, and present advanced treatment alternatives relevant to complex cases. In-depth lecture sessions address the theory and scientific basis of lymphedema treatment including anatomy, physiology, patho-physiology, and differential diagnosis. All participants are invited to bring problem cases to present to both the class and the instructor to stimulate strategizing and collective problem solving.



AAOMPT 2006 - CALL FOR ABSTRACTS

**Featured Speakers: Jenny McConnell, PT, Grad.Dip.Man.Ther, M.Bio.Eng,
Shirley Sahrman, PT, PhD, FAPTA, and Christopher Powers, PT, PhD**

The 12th Annual Conference of the American Academy of Orthopaedic Manual Physical Therapists will be held **October 20-22 in Charlotte, NC**. Interested individuals are invited to submit abstracts of original research for presentation in platform (slide) or poster format. The AAOMPT research committee chairman, H. James Phillips, must receive the abstract by **June 1, 2006**. Abstracts received after this date will be returned. You will be notified of the acceptance/rejection of your abstract in July. If you have any questions call the research committee chairman at (201) 370 7195 or email at: phillih@shu.edu. For additional organization information, check our website, www.aaompt.org.

CONTENT. The Academy is soliciting all avenues of research inquiry from case-report and case-series up to clinical trials. The Academy is particularly interested in research evaluating intervention strategies using randomized-controlled clinical trials. The abstract should include 1) Purpose; 2) Subjects; 3) Method; 4) Analyses; 5) Results; 6) Conclusions; 7) Clinical Relevance.

PUBLICATION. The accepted abstracts will be published in *The Journal of Manual & Manipulative Therapy*, which has readership in over 40 countries.

SUBMISSION FORMAT. The format for the submitted abstracts is as follows:
The abstract must be submitted by email in MS Word format to the research committee chairman (phillih@shu.edu). The abstract should fit on one page with a one-inch margin all around. The text should be typed as one continuous paragraph. Type the title of the research in ALL CAPS at the top of the page followed by the authors' names. Immediately following the names, type the institution, city, and state where the research was done. Please include a current email address where you can be contacted.

PRESENTATION. The presentation of the accepted research will be in either a slide or poster session. The slide session will be limited to 10 minutes followed by a 5-minute discussion; this session will be primarily for research reports and randomized clinical trials. The poster session will include a viewing and question answer period and will be primarily for case report/series.

PRESENTATION AWARDS. The platform and poster presentations deemed of the highest quality of those presented at the annual conference will be awarded the AAOMPT Excellence in Research Award (platform), and the AAOMPT Outstanding Case Report (poster). The awards include free tuition for the AAOMPT conference the following year.

H. James Phillips, PT, OCS, ATC, FAAOMPT
Seton Hall University
S. Orange, NJ 07079
phillih@shu.edu

Why guess ... when there's a better way?

Functional Capacity Evaluation - Job Demand Analysis - Post Offer Screening

Easy to Trust. Our patented scoring system, backed by 5 years of university-based research, takes the guesswork out of scoring and withstands legal challenges.

Easy to Use. Our software scores the evaluation and writes the report, making reporting easy and quick.

Easy to Afford. You can purchase our system through a variety of options and our referral network sends business your way.

Systems that give you the confidence you need to grow your industrial practice.

ErgoScience™

The Work Performance Experts™



15 Office Park Circle, Suite 214 Birmingham, AL 35223 • (205)879-6447 • Toll free (866)779-6447 • Fax (205)879-6397

Visit us on the web at www.ergoscience.com - Or E-mail us at info@ergoscience.com

occupationalhealth

SPECIAL INTEREST GROUP

Message from the OHSIG President

The year 2006 is off to an ambitious start. I am pleased to have this opportunity to highlight 2 of our initiatives.

OSHA Alliance: The APTA Department of Practice and the OHSIG are working to develop a formal Alliance relationship with OSHA. Our general topic is injury prevention among health care professionals, addressing patient handling in a particular setting. The OHSIG Board created a Task Force which will be responsible for designing the OSHA initiative. Kathy Rockefeller will chair the Task Force, with Drew Bossen assisting. Three to 4 OHSIG members will be selected for this initiative from a group of 10 talented volunteers. It was very positive to have such a good response from our membership.

Occupational Health Specialization Certification: The OHSIG also created a Task Force to develop a formal justification to ABPTS for certification in Occupational Health. Margot Miller will chair the Task Force, with Deborah Lechner, David Miller, Barb McKelvy, and Jen Steiner. Deborah was instrumental in the completion of the Practice Analysis, which is the foundation for proceeding with certification in OH.

We will continue to update you via our OHSIG quarterly newsletter. If you have any questions, are interested in working on a committee, have information to share for an article, etc, just let one of us know. Remember, we work on your behalf!

*Sincerely,
Margot Miller, PT
OHSIG President*

THE EVOLVING ROLE OF THE PHYSICAL THERAPIST AS THE WORKPLACE INJURY PREVENTION EXPERT

*Michael T. Eisenhart, PT
Pro-Activity Associates, LLC
Annandale, NJ 08801*

SETTING THE CONTEXT

Health care is too expensive; point blank; in America, it's just too costly. This sentiment is widely shared throughout our great country and with near double digit premium increases. The increase of 9.2% in 2006 is the lowest since 1999.¹ With this fact becoming the norm rather than the exception, anyone who plays a role in the health care system—the provider, the patient, the employer, or other—feels the pinch. A significant squeeze continues to be felt in the business sector where health benefit plans continue to be primary sticking points during contract negotiations, for example, Boeing in 2005 and Gen-

eral Electric in 2003.² This is due in part to a significant cost burden shift (58% between 2001 and 2004 for families).³ Soaring health care costs are being blamed in part for many corporate and up to half of all personal⁴ bankruptcies. And doomsday predictions from seemingly every industry are directed at the implosion of the system. Perhaps there is a silver lining; when costs become seemingly out of control, people may be motivated to seek out alternatives. Certainly the American consumer has shown this tendency to find other options when the price of gasoline climbed above \$3.00 per gallon. In that case, it was alternative fuel and transport. In the case of health care, it may just be time to revisit a concept that is often talked about, but not nearly as often implemented—PREVENTION. Yes it is happening; corporations are taking notice and struggling to find ways to curb spending.⁵

Physical therapists have long understood the body's power to heal and recover from damage caused by enormous stresses placed upon the working tissues. Our profession has continued to adapt and change to meet the evolving health care landscape and effort has been made to ensure that the communities we serve recognize the benefits of conservative care for the working body. To take this one step further, physical therapists, with guidance from the American Physical Therapy Association (APTA), are attempting to achieve the goal of positioning themselves as THE Health and Wellness Professional of choice.⁶ This type of shift from reactive care for injuries, toward professional management of wellness has substantial potential in many arenas, especially the workplace. Professionals who can offer replicable and scalable solutions for the problems associated with lost time injuries, absenteeism, and worker availability are highly valued in these tumultuous times. So how can we ensure that physical therapists are an integral part in solving the problem?

KNOW THE PROBLEM

The first question here should be: "which problem?" There are indeed many that need solutions. First there is the problem of the aging workforce, but unfortunately there is not much that can be done about this. As a workforce we are in the part of the cycle where the average age of the worker is climbing. That's a fact and even though we're good, we've not yet mastered time. Another major problem is that of obesity⁷ and the closely linked problem of inactivity. We know that people who are overweight and/or are less active, show increased utilization of the health care system, and have more lost work days resulting from injury and illness as compared to their colleagues who are not overweight or inactive. Then there's the issue of ergonomics, which we can, of course, not overlook. The problems associated with

body interface and undesirable design issues in the workplace are significant. We may or may not see workplace standards that require preventative efforts like those other countries have implemented, but as the research continues to build, the evidence that the risks are real is undeniable. So when we consider THE problem, we must start with the understanding that worker wellness and injury prevention is a comprehensive, multi-faceted problem. If we are to face it head on and eventually correct it, we must create a comprehensive solution.

KNOWING THE BUSINESS PROBLEM

It is entirely reasonable then, that a good starting point for physical therapists who would like to provide injury prevention services in the workplace is to define how our comprehensive skill set matches the comprehensive need. This goes beyond understanding the risks that are linked to neuromusculoskeletal disorders such as awkward postures, vibration (whole body versus segmental), extreme temperatures, sustained or static positioning, nicotine usage, obesity, fatigue, etc. This knowledge of risk factors and impairments, although a critical part of our practice, is helpful primarily for the end user of our services, those individuals who are motivated to prevent or resolve their discomfort concerns. That said, the same information may lose some value for the decision maker who may give the final say as to whether we (physical therapists) should be a part of their corporate framework. Theirs is the language of business—dollars and cents, profit and loss, stockholders and stakeholders—an area that clinicians often struggle to understand.

TRANSLATION SERVICES

So what is the evolving role of the PT? Simply put, if we are to carve out a role as the injury prevention and health promotion expert of choice, we need to become translators. We need to be the specialists, who pull the research about injuries, risk, and wellness together with the information regarding the bloodletting of the bottom line and identify the appropriate solutions to stop it. We must show that not only will people feel better, which has high 'humanistic value,' but that prevention is also a powerful key in improving human performance, the end result of wellness. We must carry the message that tertiary prevention, ie, prevention of chronic disability or reactionary methods to 'rehabilitate,' is only one piece of a much bigger puzzle. Primary prevention, keeping the healthy population healthy (often frowned upon as 'maintenance' in the insurance dependent therapy world) has undeniable value. And secondary prevention, preventing disorders in a mildly symptomatic population, also known as early active therapy or early mobility holds great promise.⁸ As professionals, we must develop this expertise and effectively articulate to business and industry that physical therapists are THE experts in translating the knowledge of risk factors into solutions for injury prevention. Physical therapists who can extrapolate information from the medical and rehabilitation literature and convert it into real-world, plain English applications will play a key role in the delivery of injury prevention in the workplace.

GETTING OUR FOOTING

So where should we start? Well, we know that it is a 'highly effective habit' (Covey) to begin with the end in mind, and in this environment it works quite well. If we are to accomplish our goal of becoming the injury prevention and health promotion expert in the workplace, we have to facilitate greater wellness in the workplace; but first we have to define what that means. Some might define wellness as the attainment of health or a lack of disease in the workplace. I would argue that this is not a 'win-win' solution (Covey) and rather focuses only on the personal attainment of health. In the workplace, wellness is far greater than that. Wellness is the state of being that enables optimal human performance, which in the workplace might present with such a hallmark sign as: an organizational culture that supports healthy behaviors, empowers individuals to make healthy choices, and holds accountable those that fail to do so. So to enable optimal human performance might mean to battle impairment in some (help a worker to resolve work-related pain issues), to bolster capacities in others (help workers to improve postural muscle endurance or motor coordination as required to safely take on a new job task), to provide education on risks for yet others (support a smoking cessation program by discussing the link between nicotine use and spinal disorders), and to remove barriers for still others (provide an ergonomic consultation and modification plan for an individual who is attempting to return to work following a disabling injury). Can we do all that? The answer is yes. With expedient access to the person(s) in need and the power to affect change from both a legal and organizational standpoint, we can help achieve a significant positive impact in injury prevention and the resultant costs. This is one reason why we need direct access; this is why we need to continue to foster our expertise; and this is why the business sector needs us. Keep the bottom line the bottom line—health care spending is (perceived) to be out of control. The problem of injuries and preventable illness can no longer be ignored or brushed off as the 'cost of doing business.' Quite simply, based on my limited knowledge of economics, when the costs of creating a product catch up to the price it can be sold, the seller loses ground. The win-win is to make more with less. This IS optimal human performance. This IS wellness. And with return on investment ranging between \$1.40 and \$13.00⁹ it is a solid investment. Shaving away costs in combination with improving a person's ability to perform is a more substantial business success than just producing more products.

AREAS NEEDING FURTHER STUDY

Whereas I certainly do not fancy myself a researcher, but rather a person who attempts to apply our skill set in a practical way, I am absolutely not qualified to propose a research agenda. That said, the final piece, to truly understand the role of the PT as a prevention expert, must be a look at what questions are not well answered, once our role as an injury prevention expert must be based on evidence. One such outstanding item is a reliable and (preferably) standardized method to quantify risk. We have several good tools focused on quantifying disability (both actual and perceived), but not many on quantifying the level of

risk of 'developing disability.' This type of information would be an invaluable resource for the prevention expert. Such items as the NIOSH lifting equation attempt to quantify risk for specific tasks within materials handling but fall short when considered in the context of the comprehensive picture that includes modifiable 'lifestyle' risks associated with injury.

Physical therapists have the knowledge and skill set to affect great change in the business community. We are human movement specialists, experts in the efficient use and care of the body, the one tool that MUST be used daily. We have the skill set to help people achieve more and to help businesses save money, with only minor modifications in our approach. Talk about win-win! True, getting up at 4:00AM occasionally is not easy, working with persons with multiple and sometimes severe impairments can be quite challenging. But if we, as a profession, continue to evolve to meet the need of our workplace communities, we can secure a future that entails continued fulfillment of our professional goals and mission, greater clinical freedom, and enhanced personal and financial rewards...To foster optimal human performance we are required to educate, to consult, to be confident in our expertise, to share our knowledge, and to aggressively pursue workplace wellness. The work community needs wellness experts and it is my hope that, as a profession, we aggressively accept the challenge to meet that need.

REFERENCES

1. Hewitt Associates, LLC. U.S. Companies Face Lowest Health Care Cost Increases Since 1999. 10 October 2005.
2. Labor Notes. Available at: www.labornotes.org. Accessed February 2, 2006.
3. Hewitt Associates LLC. Health care expectations: future strategy and direction 2005. 17 November 2004.
4. Appleby J. More insured workers unable to pay medical bills. *USA Today*. 29 April 2005.
5. Hewitt Associates, LLC. Employers seeking to attack root causes of health care cost inflation. 10 January 2005
6. American Physical Therapy Association. APTA BOD Meeting Release. 21 March 2003.
7. Aldana S, Pronk N. Health promotion programs, modifiable health risks, and employee absenteeism. *J Occup Environ Med*. 2001;36-46.
8. Hagen E, Grasdal A, Eriksen H. Does early intervention program with light mobilization program reduce long-term sick leave for low back pain: a 3-year follow-up study. *Spine*. 2003;28:2309-2316.
9. Goetzel R, Juday T, Ozminkowski R. A systematic review of return on investment (ROI) studies of corporate health and productivity management initiatives. 1999.

Orthopaedic Section timers are available for sale!

Check out the shopping cart at orthopt.org
for photo, details, and pricing.

THE OCCUPATIONAL HEALTH SPECIAL INTEREST GROUP BOARD EXECUTIVE COMMITTEE AND COMMITTEE CHAIRS/MEMBERS

PRESIDENT

Margot Miller, PT

Isernhagen WorkWell Systems

Phone: (866) 997-9675

Fax: (218) 728-6454

Email: mmiller@workwell.com

VICE PRESIDENT

Kathleen Rockefeller, ScD,PT, MPH

University of South Florida

Phone: (813) 974-4677

Email: kathy_rocky@msn.com

TREASURER

Nicole Matoushek, MPH, PT, CEES, CSHE

ErgoRehab, Inc.

Phone: (866) 596-3746,

Fax: (727) 896-1336

Email: nmatoushek@hotmail.com

SECRETARY

Barb McKelvy, PT

Strategic Rehab Options

Phone: (614) 496-7996 Fax: (614) 891-3563

Email: barbmckelvy@aol.com

NOMINATING COMMITTEE

Linda Nicoli, PT, CEES, Chair

Workplace Wellness Services, Inc.

Phone: (941) 400-6827 Fax: (775) 306-1885

Email: lnicoli@comcast.net

NOMINATING COMMITTEE MEMBER

Frank Fearon, PT, DHSc, OCS, FAAOMPT

North Georgia College & State University

Phone: (706) 864-1899 Fax: (706) 864-1493

Email: ffearon@ngcsu.edu

NOMINATING COMMITTEE MEMBER

Jennifer Pollak, PT

Aurora Rehabilitation Center

Phone: (414) 649-5381 Fax: (414) 747-8414

Email: jennifer.pollak@aurora.org

EDUCATION COMMITTEE

Dee Daley, PT, MSHOE, Chair

WorkWell Systems

Phone: (910) 693-1558

Email: kanandarqu@aol.com

PRACTICE & REIMBURSEMENT COMMITTEE

Drew Bossen, PT, Chair

Atlas Ergonomics

Cell: (319) 430-3382 Fax: (319) 354-0453

Email: dbossen@atlasergo.com

RESEARCH COMMITTEE

David Miller PT, PhD, Chair

Springfield College

Phone: (413) 748-3539

Email: djmiller47@comcast.net

MEMBERSHIP COMMITTEE

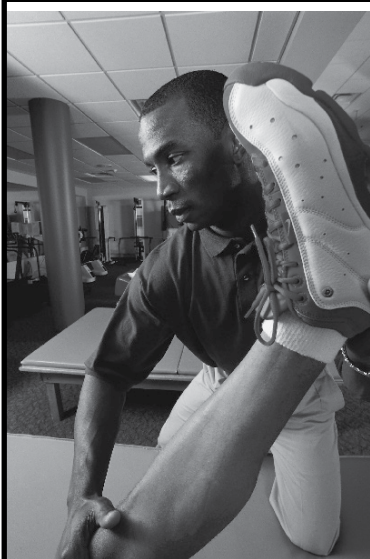
Jennifer Steiner, PT, OCS, MBA, Chair

HealthSouth

Phone: (651) 636-2666 Fax: (651) 636-0548

Email: jennifer.steiner@healthsouth.com

Post-Professional Programs in Physical Therapy



Online, late afternoon and evening classes available.

- Transitional Doctor of Physical Therapy (tDPT)
- Clinical Residency in Advanced Orthopedic Physical Therapy
- Advanced Master of Science (MS)
- Certificate of Advanced Study (CAS) in Physical Therapy
 - Neurology, Orthopedics
 - Individual Study
 - Pediatrics, Geriatrics
- Option for combined tDPT/MS or tDPT/CAS

INFO: pt@mghihip.edu
(617)726-0422

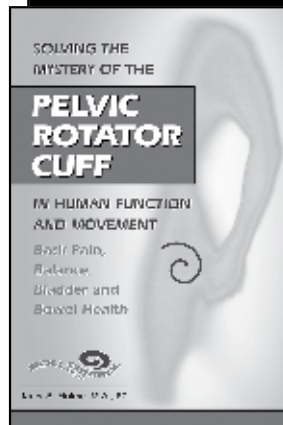


CHARLESTOWN NAVY YARD
BOSTON MA

MGH INSTITUTE
OF HEALTH PROFESSIONS
an academic affiliate of Massachusetts General Hospital

www.mghihip.edu | Advancing people. Advancing care.

Pelvic Rotator Cuff Book



- For Back Pain, Balance, Bowel and Bladder Health
- 168 pages
- Over 75 Illustrations
- Evidence-based approach to functional assessment and treatment

by Janet A. Hulme PT, MA



\$24.95

Visa and Mastercard accepted

1-800-549-8371

www.phoenixpub.com

Pelvic Rotator Cuff Seminars

Treating: • Low Back and SI Dysfunction • Balance and Gait

Locations 2006

Feb 24-25 Tampa	July 21-22 Missoula
Mar 26 Seattle	Aug 18-19 Las Vegas
April 7-9 Boston	Sept 9-10 Manchester
April 21-22 Long Island	Oct 20-21 Minneapolis
May 19-20 Chicago	Nov 4-5 New York
June 10-11 Milwaukee	

Janet A. Hulme PT, MA



Call 1-800-549-8371 or visit www.phoenixpub.com

AN UPDATE ON ANKLE ARTHRITIS

RobRoy L Martin, PhD, PT, CSCS

Duquesne University, Pittsburgh, PA

The overall incidence of arthritis is increasing in our population. In 1998 nearly 43 million Americans had arthritis or chronic joint pain. This number has increased to 66 million (1 in 3 adults) in 2005. Arthritis costs our country over \$86 billion a year and is the second leading cause of work disability.¹ Unlike the hip and knee where osteoarthritis is the most common form of arthritis, post-traumatic arthritis is most common at the ankle.

Post-traumatic arthritis accounts for approximately 80% to 90% of all ankle arthritis and results in joint degeneration that is characteristically asymmetrical. Trauma can damage cartilage as well as cause structural changes associated with fractures and ligamentous injury. These structural changes can lead to malalignment, altered weight bearing forces, and incongruent joint loading. Recently, a relationship between ligamentous ankle injury and the onset of ankle arthritis has been identified.¹⁵ After a ligamentous injury to the ankle, malalignment was found in 73% of individuals. A varus calcaneal position was found in individuals with a history of a lateral ankle sprain while a valgus calcaneal position was found in individuals with a history of a medial ankle sprain.¹⁵ Ankle instability combined with incongruent loading may be particularly detrimental to cartilage. In an incongruent ankle, the addition of instability produced a 300% increase in dynamic peak pressures and an 800% increase in dynamic stress loading rates.¹³ Related to the onset and progression of arthritis, cartilage damage is known to be more severe as the rate of loading increases.¹⁶ These findings may have implications in conservative treatment with a potential need to address the biomechanics and alignment of individuals after a ligamentous ankle injury.

There is little research literature regarding physical therapy intervention for individuals with ankle arthritis. Generally, decreasing joint stress, symptom management, and patient education are standard components of conservative treatment for individuals with ankle arthritis. Stretching and mobilization to normalizing range of motion, of the ankle as well as the other joints of the foot, have been a suggested means of decreasing joint stress. Other recommended methods of decreasing joint stress include shoe wear modification, bracing, and the use of an ambulatory assistive device. Shoe wear modification can incorporate the use of materials and changes in shoe structure that may help to decrease joint forces. As an example, a rocker sole and solid-ankle cushion-heel (SACH) was found to have an

advantage in gait kinematics over traditional shoes.¹⁷ Bracing, such as an ankle foot orthosis (AFO) can be used to limit the amount of ankle motion. A double-upright brace with a patellar tendon bearing support may redistribute weight bearing forces from the ankle to the brace. Other suggested treatments include the use of pain relieving modalities and patient education in activity modification. The overall effectiveness of these treatment interventions is largely unknown. However, the outcome of conservative treatment intervention is likely to be determined by the extent of arthritis, patient's expectation, and desired level of activity.

If conservative treatment is unsuccessful there are a number of surgical options, including arthroscopy, resurfacing, joint distraction, osteotomy, arthroplasty, and arthrodesis. While arthrodesis is the most common surgical method used to treat advanced ankle arthritis, arthroplasty is gaining more interest. Initially used in the 1970s, total ankle arthroplasty (TAA) was largely abandoned by the late 1980s. Although initial results of TAA were promising, the long-term results demonstrated an unacceptable failure rate.^{2-8,10,14,18} Motivated by the success of knee and hip arthroplasty and the known problems associated with ankle arthrodesis, a second generation of ankle prostheses were developed in the mid 1990s. A number of long-term studies of TAA are now available that demonstrate acceptable outcomes with these newer prostheses.^{4,9,11,12} Optimism that TAA can be an appropriate option in the surgical treatment of ankle arthritis has been revived. Further research is needed to better define TAA outcomes and the best course of postsurgical management.

REFERENCES

1. Arthritis. Available at: www.arthritis.org/resources/default.asp. Accessed February 24, 2006.
2. Bolton-Maggs BG, Sudlow RA, Freeman MA. Total ankle arthroplasty. A long-term review of the London Hospital experience. *J Bone Joint Surg Br.* 1985;67:785-790.
3. Brodsky AR, O'Malley MJ, Bohne WH, Deland JA, Kennedy JG. An analysis of outcome measures following the Brostrom-Gould procedure for chronic lateral ankle instability. *Foot Ankle Int.* 2005;26:816-819.
4. Buechel FF, Sr., Buechel FF, Jr., Pappas MJ. Ten-year evaluation of cementless Buechel-Pappas meniscal bearing total ankle replacement. *Foot Ankle Int.* 2003;24:462-472.
5. Groth HE, Fitch HF. Salvage procedures for complications of total ankle arthroplasty. *Clin Orthop Relat Res.* 1987;244-250.
6. Jensen NC, Kroner K. Total ankle joint replacement: a clinical follow up. *Orthopedics.* 1992;15:236-239.

7. Kitaoka HB, Patzer GL. Clinical results of the Mayo total ankle arthroplasty. *J Bone Joint Surg Am.* 1996;78:1658-1664.
8. Kitaoka HB, Patzer GL, Ilstrup DM, Wallrichs SL. Survivorship analysis of the Mayo total ankle arthroplasty. *J Bone Joint Surg Am.* 1994;76:974-979.
9. Knecht SI, Estin M, Callaghan JJ, et al. The Agility total ankle arthroplasty. Seven to sixteen-year follow-up. *J Bone Joint Surg Am.* 2004;86-A:1161-1171.
10. Kofoed H. Cylindrical cemented ankle arthroplasty: a prospective series with long-term follow-up. *Foot Ankle Int.* 1995;16:474-479.
11. Kofoed H, Lundberg-Jensen A. Ankle arthroplasty in patients younger and older than 50 years: a prospective series with long-term follow-up. *Foot Ankle Int.* 1999;20:501-506.
12. Kofoed H, Sorensen TS. Ankle arthroplasty for rheumatoid arthritis and osteoarthritis: prospective long-term study of cemented replacements. *J Bone Joint Surg Br.* 1998;80:328-332.
13. McKinley TO, Rudert MJ, Koos DC, Brown TD. Incongruity versus instability in the etiology of posttraumatic arthritis. *Clin Orthop Relat Res.* 2004;44-51.
14. Newton SE, 3rd. Total ankle arthroplasty. Clinical study of fifty cases. *J Bone Joint Surg Am.* 1982;64:104-111.
15. Valderrabano. Ligamentous post-traumatic ankle osteoarthritis. *Am J Sports Med.* 2005.
16. Vrahas MS, Mithoefer K, Joseph D. The long-term effects of articular impaction. *Clin Orthop Relat Res.* 2004;40-43.
17. Wu WL, Rosenbaum D, Su FC. The effects of rocker sole and SACH heel on kinematics in gait. *Med Eng Phys.* 2004;26:639-646.
18. Wynn AH, Wilde AH. Long-term follow-up of the Conaxial (Beck-Steffee) total ankle arthroplasty. *Foot Ankle.* 1992;13:303-306.

Orthopaedic Section Tote



\$15.00 (Member Price) **\$20.00** (Nonmember Price)

Please add \$5 for shipping & handling.

Contact Tara Fredrickson at the Section Office
at 800-444-3982, ext. 203 or check out the
shopping cart at orthopt.org.

THE JANET G. TRAVELL, MD SEMINAR SERIESSM

Course Schedule 2006 CME/CEU Approved!

Low Back and Pelvic Pain

September 30 - October 1, 2006

Workshop will be held in San Francisco, CA
Contact Angela Oliva 415.441.5800

Trigger Point Needling

May 3 - 7, 2006

Review/Certification Exam

June 9 - 10, 2006

Program Directors:

Robert Gerwin, MD, Jan Dommerholt, PT, MPS
Information can be found online at www.painpoints.com

Workshops held in Bethesda, MD, a suburb
of Washington, DC (USA)

Interested in sponsoring a course

For information, contact

Ms. Avelene Mahan at Myopain Seminars

7830 Old Georgetown Road, Suite C-15

Bethesda, MD 20814-2432

At 301.656.0220 (phone), 301.654.0333 (fax)

mahan@painpoints.com (email)

painmanagement

SPECIAL INTEREST GROUP

PRESIDENT'S MESSAGE

Joseph A. Kleinkort, PT, MA, PhD, CIE, CEAS, DAAPM

This year, CSM was better than ever and Marie Hoeger Bement outdid herself with this year's programming. Chronic Pain Assessment and Management was a huge success with Maureen Simmonds, Nancy Rich, and Carolyn McManus presenting. Carolyn's wholistic approach to Pain Management got rave reviews! She has indicated that she may be able to get John Kabot Zinn in 2 years to address our group which would be awesome. We will look to share him with other groups who are interested in his world changing approaches to Pain Management.

Our reception following our Business Meeting was a huge success thanks to a generous company donation. We had almost 30 people in attendance. It was a great time to network and get to know all of our SIG members. Make plans for attending next year's reception. We also had about three times as many people attend our business meeting. It is early yet but our Nominations Chair, Tom Watson is receiving nominations for this year's election of President, Vice President, Secretary, and Treasurer. A huge thanks to those who have worked so diligently during this term.

In this issue you will read a synopsis of Carolyn's wonderful presentation at CSM which should be very helpful to all of us dealing with Pain Management.

On the scientific front, researchers have discovered Runx1 which is a group of proteins which transmit pain and perception of movement to the spinal cord. In lab animals those that are deficient in Runx1 showed a decreased response to pain stimuli! This work can have future wide implications on how we address the chronic pain patient. Further information can be found in the journal, *Neuron*.

THE ART OF TREATING CHRONIC PAIN

Carolyn McManus

Over the course of my career specializing in the care of people with chronic pain, I have developed an approach to pain management that I share with all of my patients. I presented this approach at CSM 2006 as part of a program on the assessment and treatment of chronic pain with a special focus on fibromyalgia. I would like to now summarize this approach here.

The well being and quality of life of a person living with

chronic pain depends on how he or she responds to this adversity. As physical therapists, we cannot cure chronic pain, but in addition to teaching exercise, we can help people adopt a skillful response to chronic pain that helps them cope and live more fully.

First, we can remind people they are not their pain. Frequently people take on a sick-role, defining themselves by their pain and limitations and emphasizing their isolation from others. The energy and effort required to meet daily challenges can lead people to believe their pain is their identity. Compared with the ideal body promoted by the media, they may perceive their body as damaged, impaired, and inadequate. With this outlook, they attempt to respond to their circumstances from their limitations and weaknesses.

We can let our patients know they are whole human beings who happen to also have a chronic medical condition. Chronic pain is not who they are. This is not to diminish the challenges they face, but rather to recognize that pain is not their identity. This is an important insight for many. It does not change their pain in any way; however, it offers a shift in their *relationship to* their pain. Rather than navigate life from a perspective of feeling broken, people are empowered to meet their world from a position of wholeness and draw on their abilities and strengths. It is not only important that patients see themselves as whole human beings with inner strengths and abilities, but that we see them that way as well.

Second, we can help people better understand pain perception. According to Brooks and Tracy in an outstanding article on the topic of pain perception, "Pain is more than sensation. The relationship between reported pain intensity and the evoking peripheral stimulus depends on many factors, including level of arousal, anxiety, depression, attention, and expectation."¹

Current fMRI research examining pain perception reveals that peripheral input from pain sensing nociceptors does not solely activate brain areas responsible for the location of pain, but rather a broad constellation of brain areas are activated. These areas are collectively termed the pain matrix and include those responsible for attention, cognitive and evaluative functions, emotional processing, and memory.²

We can clarify for patients these 2 main components that contribute to their experience of pain. One is the pain sensation itself and the second is their reaction to that sensation. Their reaction includes a physical reaction or what is happening in the body, a cognitive reaction or how they talk to themselves about the sensation, and an emotional reaction or the feelings that they

experience in reaction to the sensation. This concept can be presented in the simple equation:

$$\text{Pain} = \text{Sensation} + \text{Our Reaction}$$

Physical
Cognitive
Emotional

They may have no control over the sensation of pain, but they can experiment with how they react to the sensation. By providing patients with this equation and offering them a variety of new responses to pain, they can discover for themselves skillful responses to pain that minimize distress.

To control their response to pain, people must first observe their present reactions to pain with openness, acceptance, and curiosity. This manner of observation is termed mindful awareness. No effort is made to judge or change an experience, or strive toward a predetermined goal. When mindful, one's only effort is to observe present moment experiences just as they are.³

It is common for the body to adopt a stress response in reaction to pain. People find they frequently breathe in a shallow, rapid manner or often hold their breath and become tense. They often talk to themselves in very negative ways. In addition, people commonly feel frightened, angry, or sad. These physical reactions, thoughts, and feelings are interconnected and influence one another. They also amplify the experience of pain and add to distress.

Once people have observed their reactions to pain, the next step is to offer them alternative and helpful options for responding to pain. One simple option is to breathe deeply. A straightforward instruction is: "Breathe into your waistband." This gives patients their first experience of controlling their reaction to pain. The pain is still there; however, they are observing their breathing pattern and choosing to breathe deeply. Diaphragmatic breathing can also help calm a person's mind and begin to relax his or her body.

Verbal cues can be repeated in concert with the breath to promote a relaxed body and steady mind. For example, we all know the feeling of being on a very long trip and finally making it home. As you open the door and enter your home, a feeling of ease and relaxation can sweep over the body. Drawing on this feeling, one simple phrase to use is "arriving home." Patients can repeat to themselves "arriving" on the in-breath, "home" on the out-breath. Other phrases include "May I be peaceful" or "I grow calm." If people practice in a religious tradition, they can use a word or phrase from religious writing that is meaningful to them or the phrase 'let go' on the in-breath, 'let God' on the out breath. A person can choose any word or phrase that is calming.

"Breathe." The instruction sounds so simple, but its power should never be underestimated. One of my patients with fibromyalgia, ankylosing spondylitis, a seizure disorder, and coronary artery vasospasm described her experience this way: "Most

important to me is that every time I'm faced with what could be a life threatening episode, my practice has reminded me to reach inside. I have to admit that each time I'm surprised at what I find. Not a crying child gasping for breath, but some sort of substantive fabric of breath, magically woven inside me. It's gentle, it's strong, it faces the fear of death, and more severe disability over and over again like I'm riding a wave above dangerous waters with a calm that I can't possibly understand. I see and I feel myself riding the waves, I'm dry and warm and I know that there's something holding me up, even if it's just for the moment, just for one breath."

A second option is to deliberately relax. This can be very challenging for some patients and may require specific training in relaxation exercises. Many patients need reassurance that learning to relax takes time and practice. They need to know that initially, some body areas relax easily and others do not relax at all. It is key to meet those areas that remain tense with acceptance, compassion, and understanding. Just like plants grow according to an internal clock, so too, muscles relax in their own time. Without this reassurance, patients can feel they are doing it wrong, become more self-critical and even increase their tension. Common relaxation exercises include progressive relaxation, autogenic training, relaxation body scan, and guided imagery.

Many physical therapists may only be comfortable offering these physical options. We are not psychologists, however, I believe we can also offer simple cognitive guidelines. I want to make clear I am not suggesting we offer psychological services and strongly urge anyone working with patients with chronic pain to have psychologists available for consult and referral. I do believe physical therapy treatment is enhanced when we provide simple verbal cues and coaching that suggests a healthy way to relate to pain.

One simple metaphor for how the mind reacts to pain is a camera lens. The mind shifts to a narrowed zoom lens, focusing on the pain, sometimes at the total exclusion of all other input. Patients can be encouraged to experiment with the image of the mind in a wide angle lens position. They can imagine the mind as the sky, boundless, open, vast, and spacious and the pain as a cloud floating in the sky.

Another simple instruction is to suggest a patient to talk to him or herself as he or she would talk to a dear friend if that dear friend were experiencing chronic pain. When given this recommendation, people often realize that to judge, criticize, and predict a gloomy future for a friend would make the friend feel worse. Why choose such a course? Sometimes this is just the insight needed for a patient to experiment with self-talk that is supportive and encouraging.

Finally, people with chronic pain can fall into the habit of catastrophic thinking. As an antidote, in addition to recommending people talk to themselves as they would to their dear friend, encourage people to keep a present moment focus. It is

important to plan for the future, but not to spend life lost in negative thoughts about tomorrow. The truth is, no one knows what tomorrow will bring. It is easy to feel overwhelmed when the unknowns of tomorrow are added on to today's challenges. It also wastes a lot of energy. Choices made today are the foundation for tomorrow. A patient can reflect, "Is this line of thinking that I want to continue to give energy to? What is a more skillful story? What can I do today to best care for myself?" The choice is always theirs.

Physical reactions, thoughts, and emotions in reaction to pain are interconnected. Perhaps the most challenging to deal with are people's emotions. For a patient with chronic pain, emotions can be complicated, intense, and influenced by many factors. Unfortunately, there is no simple formula for dealing with the range of emotions evoked by chronic pain. Many patients benefit from a referral to a psychologist with whom they can examine their emotions in depth. As physical therapists we can meet patients' emotions with acceptance and respect, help them recognize the difference between the physical sensation of pain and emotional reactions to that sensation, and encourage them to meet themselves and their emotions with compassion and kindness.

Many years ago I participated in meditation retreat led by Thich Nhat Hanh, a Buddhist monk who worked tirelessly for peace during the Vietnam War and was nominated for the Nobel Peace Prize by Martin Luther King. He was asked, "How do you transform great suffering?" He responded, "To transform great suffering, you must recognize your own greatness. You must know yourself to be like a great river. If I had a glass of water and put a handful of dirt or compost into the glass, you would think that the water was no longer good. However if I threw that same handful of dirt or compost into a great, great river, the river could receive it, incorporate, and transform it. This is what you must do. You must recognize you are this great, great river. I have done this, so can you."

I have always loved this image as it points to something in us that is larger than our suffering. I suggest that the art of working successfully with people with chronic pain includes seeing in them and inspiring them to see in themselves something akin to the great river that Thich Nhat Hanh spoke of, something that is greater than their suffering and offers a source of inner strength, insight, and wisdom. It is my hope that this article leaves the reader with some practical tools for this art.

REFERENCES

1. Brooks J, Tracey I. From nociception to pain perception: imaging the spinal and supraspinal pathways. *J Anat.* 2005;207(1):19-33.
2. Ibid.
3. Grossman P, Niemann L, Schmidt S, Walach H. Mindfulness-based stress reduction and health benefits. A meta-analysis. *J Psychosom Res.* 2004;57(1):35-43.

WOMEN FEEL PAIN MORE THAN MEN, RESEARCH SHOWS

This article is reprinted with permission from the University of Bath.

Women feel pain more than men despite the popular notion that the opposite is true, according to research.

Scientists investigating gender differences in pain have found that not only do women report more pain throughout the course of their life time, they also experience it in more bodily areas, more often and for longer duration when compared to men.

There also seem to be differences in how men and women think and feel about their pain. For example, anxiety may affect men and women in different ways, and the strategies used to cope with pain may actually make their experience worse.

These conclusions are based on several studies into the pain response of volunteers exposed to a pain stimulus, such as a cold water bath, as well as field studies in clinics and hospitals.

"Until fairly recently it was controversial to suggest that there were any differences between males and females in the perception and experience of pain, but that is no longer the case," said Dr Ed Keogh a psychologist from the Pain Management Unit at the University of Bath*.

Research is telling us that women experience a greater number of pain episodes across their lifespan than men, in more bodily areas and with greater frequency.

"Unfortunately all too often the differences between males and females are not considered in pain research or practice, and instead are either ignored or statistically averaged.

There remains much discussion in the scientific community about why these gender differences in pain exist.

"While most explanations concentrate on biological mechanisms, such as genetic and hormonal differences, it is becoming increasingly clear that social and psychological factors are also important," said Dr Keogh.

One example of this is the different strategies men and women use to cope with pain. Whilst women tend to focus on the emotional aspects of pain they experience, men tend to focus on the sensory aspects, for example concentrating on the physical sensations they experience.

"Our research has shown that whilst the sensory-focused strategies used by men helped increase their pain threshold and tolerance of pain, it was unlikely to have any benefit for women," said Dr Keogh.

Women who concentrate on the emotional aspects of their pain may actually experience more pain as a result, possibly because the emotions associated with pain are negative.

To carry out this research, scientists asked volunteers to place their nondominant arm in a warm water bath (37° centigrade) for 2 minutes before transferring the hand into an ice water bath maintained at a temperature of 1 - 2° centigrade.

The cold pressor tank allows researchers to monitor the pain threshold (the point at which volunteers first notice the pain) and pain tolerance (the point at which volunteers can no longer stand the pain). An upper time limit of 2 minutes is used in these kinds of studies.

Other research by the Pain Management Unit has looked at the relationship between gender differences in anxiety sensitivity and pain. Anxiety sensitivity is the tendency to be fearful of anxiety-related sensations (eg, rapidly beating heart), and seems to be important in the experience of pain sensations. In a study of 150 patients referred to a hospital clinic with chest pain, researchers discovered that the factors that predicted pain in men and women were different.

Researchers believe that it is the fear of anxiety-related sensations and an increased tendency to negatively interpret such sensations, both of which are more predominant in women than men that influences women's experiences of pain.

"Chest pain is associated with coronary heart disease, angina and heart attacks, so it is understandable that chest pain is a cause of great anxiety for patients and that anxiety has an important role in the experience of chest pain," said Dr Keogh.

This research is also consistent with studies that suggest that men and women experience chest pain in different ways and that, compared to men, women can sometimes report more intensive pain and nausea.

Another study has shown that interdisciplinary approaches to pain management may have different effects on women than men.

Working with the Royal National Hospital for Rheumatic Diseases in Bath, researchers from the Pain Management Unit carried out assessments on 98 patients in chronic pain as they went through a pain management program involving physiotherapy, psychological treatments and occupational therapy.

Whilst both men and women exhibited a significant reduction in pain intensity both during and immediately after the programme, 3 months later women reported the same levels of pain as pre-treatment, whereas men's remained the same as immediately post-treatment. Interestingly, there were improvements in disability, in both sexes, which were maintained at follow-up. This suggested that there may also be important differences in pain experiences and improvements in disability.

"Gender can be profitably examined as a potential predictor of pain experience, and in particular, pain following treatment, but it is too early to say exactly how gender-specific interventions can be tailored to address these potentially important differences," said Dr Keogh.

'However, evidence is certainly converging to suggest that accounting for greater differences may increase the overall effectiveness of treatments.'

REFERENCE

URL, University of Bath, UK, <http://www.alphagalileo.org>

Nominations are Being Accepted for the Upcoming 2006 Elections

- President
- Vice President
- Nominating Committee

If you are interested in serving or know of someone who is, please contact our Nominating Committee Chair, Pamela Duffy, at duffypam@aol.com

KAISER PERMANENTE - HAYWARD

Physical Therapy Fellowship in Advanced Orthopedic Manual Therapy

3-month Clinical Mentorship
6-month Advanced Clinical Fellowship

Study with the most experienced residency faculty in the United States.

25 Years of Excellence

San Francisco Bay Area

Contact us at: (510) 675-4259
kaiserhaywardptresidency.com

APTA

American Physical Therapy Association
Credentialed Postprofessional Clinical Fellowship Program



performingarts

SPECIAL INTEREST GROUP

Message from the Vice President

I would like to express a special thank you to all those who worked tirelessly at Combined Sections Meeting in sunny San Diego. It was a very busy and productive meeting for the Performing Arts SIG. Our programming was entitled, Evaluation and Management of Lumbar and Pelvic Dysfunction in the Performing Artist and the course explored evidence surrounding the evaluation and treatment of these regions. Our speakers were excellent and covered the entire continuum of care from medical intervention, physical therapy diagnosis and treatment, to performing arts specific progressions were included. Audiotapes of the session are available through the APTA program division for those who would like the information but were unable to attend.

We continue to explore more and various ways to support our members and we welcome feedback. The committees of the PASIG developed some action plan items for the next few years and we received lots of valuable input from the members attending our CSM Business Meeting. We also want to hear from you! We have placed these action items on our website at www.orthopt.org and we encourage your review and input on these developing plans. If you have any suggestions for additional action items or expansions on existing items, please e-mail the appropriate committee chair and provide input; we value your opinions. If you see a task that is near and dear to your heart and want to join the committee to participate in the planning and execution of the activity, WE WANT YOU! Our committees are never closed and you can join at any time.

A request was made at the Orthopaedic Business Meeting that the article generated from the development of the Description of Specialty Practice for Performing Arts (Gamboa J, Hagins M, Manal T. An analysis to define the clinical practice of physical therapy for performing artists. *J Dance Medicine* 2005;9(2):41-55) be reprinted in *OPTP* for easy access to membership. My thanks to Sharon Klinski and Chris Hughes for arranging and obtaining the permission to reprint the article for publication. I would also like to take this opportunity to thank Jeffrey T. Stenback, PT, OCS, immediate past president of the PASIG. Jeff has selflessly stepped back in to help the PASIG Board in Susan's absence (due to Hurricane Katrina) and his contribution has been invaluable. We all owe him a debt of gratitude; thank you Jeff from the entire Board.

As we enter this New Year, we are presented with many opportunities to develop our existing group. The student scholarship is a real means by which we can reach out to students interested in performing arts medicine and we need to get the word out to PT schools that such an award is available. Our committees are getting better organized and our educational programming is continuing to be evidence-based and tied to competencies that we identified in our Description of Specialty

Practice document. As such it is imperative that our executive board stays on task and continues our forward momentum. We have 2 Board positions which are open for 2007: Vice President and Secretary, as well as one nominating committee position. These are elected positions (their job descriptions will be posted on our website), and we need your involvement in order to place qualified individuals into these positions. Please contact Karen Hamill, Nominating Chair, with your suggestions for candidates.

As always, we look forward to an exciting and busy year. Look over our current action plan items and see if there is a particular activity or committee with which you'd like to get involved. We need your support to make YOUR organization the best that it can be!

*Yours in the arts,
Tara Jo Manal, Vice President*

Board of Directors Initiatives:

- Create a manual and timetable for incoming executive board members to renew/update objectives and strategic plan
- Network within and outside of the PASIG membership to identify/develop new leadership and skills/capabilities that benefit PASIG development

Education Committee Initiatives:

Chair: Tara Jo Manal

- Develop/schedule regular CE courses (ongoing):
(1) PA Emergency Responder (2) Programs related to dance and music
- Encourage participation/submission of materials at CSM and annual conference
- Develop working interpretation of DACP to facilitate future CSM programming and PASIG education
- Coordinate with executive board and Practice Committee to be a resource for development of fellowship and residencies within membership based on the DACP

Membership Committee Initiatives:

Chair: Julie O'Connell

- Develop and send out welcome packet for new members (13)
- Promote the PASIG to educational institutions to increase PT student membership (10)
- Coordinate with Practice Committee to maintain updated membership database and directory (10)
- Network within and outside of the PASIG membership to identify and develop members with potential leadership and skills/ capabilities that will benefit PASIG development (7)



APTA Performing Arts Special Interest Group

EMERGENCY FIRST RESPONSE FOR THE PERFORMING ARTIST

- Coming September 2006
- Red Cross Certification as an emergency first responder
- Gain the skills needed to handle medical and performance Emergencies
- Location: University of Delaware, Newark, DE
- 3 DAY COURSE (complete with Lab Sessions) September 15-17
- Discounts for Ortho Section member
- For Information contact: Tara Jo Manal
- tarajo@udel.edu

NOMINATING COMMITTEE REPORT: CALL FOR NOMINATIONS

Chair: Karen Hamill

The PASIG invites you to submit your name or that of a willing candidate to run for office. Help to contribute and learn about the performing arts by serving. The following positions are open for nomination: Vice President, Secretary, and Nominating Committee member. Each position is for a 3-year term. This is a great way to get involved and meet wonderful people from across the country. We hope some of you will step forward! We have listed the various duties for each position below.

PASIG VICE PRESIDENT (ELECTED)

Duties:

- Assumes all duties of the President if she/he is unable to serve and/or attend scheduled meetings.

Additional Responsibilities:

- Serves as a voting member of the Executive Board.
- Reviews the policies and procedures and updates annually.
- Serves as liaison to Orthopaedic Section Program Coordinator regarding changes to Policies and Procedures.
- Attends the following meetings: PASIG Executive Board Meetings and conference calls, PASIG Annual Business Meeting at CSM.
- Forwards copies of official correspondence to the President and to the Section's Program Coordinator.
- Assists the President in providing for the orientation of all new officers and chairs.
- Chairs the PASIG Education Committee to facilitate PASIG programming at CSM.
- Coordinates PASIG programming (for CSM) with the program chair of the Orthopaedic Section based on suggestions by the PASIG membership.
- Is liaison for all PASIG program speakers to the Orthopaedic Section and is responsible for meeting all speaker information deadlines for CSM.
- Other duties as assigned by the President.

PASIG SECRETARY (ELECTED)

Duties:

- Records minutes of the PASIG Annual Business Meeting and Executive Board Meetings.
- Carries on official correspondence on behalf of the PASIG including mailed notification of meetings and elections.
- Sends notices as specifically requested by the PASIG Executive Board.

Additional Responsibilities:

- Serves as a voting member of the Executive Board.
- Records minutes of Executive Board conference calls.
- Distributes minutes to the Executive Board.
- Serves as editor for the PASIG newsletter and Chair of the Publication Committee.
- Sends all information to be included in *Orthopaedic Physical Therapy Practice* prior to each deadline (newsletter submission) to the Section office.
- Serves as liaison to the editors of Orthopaedic Section and APTA publications (eg, OPTP).
- Attends the following meetings: PASIG Executive Board Meetings and conference calls, PASIG Annual Business Meeting at CSM.
- Forwards copies of official correspondence to the President and to the Section's Program Coordinator.
- Maintains a file that includes the following items for use in assisting the President in the orientation of the successor to the office of Secretary: minutes from meetings and conference calls, records associated with the newsletter.
- Acts as historian for the PASIG. Maintains a historical account of PASIG activities/meetings, etc.
- Other duties as assigned by the President.

NOMINATING COMMITTEE (ELECTED)

Duties:

- Is responsible directly to the membership.
- The senior member of the Committee becomes its Chair.

Additional Responsibilities:

- Carries out or supervises the carrying out of the Policies and Procedures for elections via mail ballot and works with the Orthopaedic Section office on coordinating this project.
- Prepares a slate of candidates for each PASIG election that is submitted to the Executive Board four months prior to the CSM business meeting.

Guidelines: Nominees must be PASIG and Orthopaedic Section members. Nominees must give their consent to be nominated before their names are put forward. Nominees may be self-nominated. Upon agreeing to be nominated, nominees will be asked to write a short biography and a position statement regarding their ideas and role as an officer in the PASIG.

Please contact any of us with your nominations:

Karen Hamill, PT, CSCS

Nominating Committee Chair

Email: dancingkaren@hotmail.com

Stephania Bell, MS, PT, OCS, CSCS
Nominating Committee
Email: stephaniab@comcast.net

Sheyi Ojofeitimi, MPT
Nominating Committee
E-mail: sheyi.ojofeitimi@liu.edu

RESEARCH COMMITTEE REPORT

Chair: Shaw Bronner

Members: Jeff Stenback, Jennifer Gamboa, Marshall Hagins, Sheyi Ojofeitimi, Brent Anderson

Tara Jo Manal, PASIG Vice President, is doing a slam dunk job at programming – KUDOS! Our PASIG programming at CSM in San Diego was not merely standing room only, but out the door. This kind of visibility is an immeasurable benefit for our SIG.

Action Plans

The Research Committee has been gathering many ideas for future efforts. The prioritization of these ideas by members attending the PASIG CSM business meeting will ensure we focus on the most important items. These include:

- Promote development of alternative IRB for PTs lacking affiliations with academic/medical institutions.
- Contact PA practices accepting affiliating students to gather names of all schools with PA clinical affiliation contracts.
- Send citation blasts to the clinical coordinators for posting at schools with PA clinical affiliation contracts to facilitate:
 - increased PASIG awareness, student scholarship,
 - possible future members,
 - future student research.
- Begin theme-based citation series. Solicit volunteers to write topics.
- Increase CSM abstract submissions.
- Coordinate with the Orthopaedic Section to continue to ensure grouping of PA platforms and posters at CSM to maximize PASIG visibility.
- Encourage PASIG membership to contribute to PA case study series as a way to contribute to PA evidence-based practice.
- Contact all PA presenters at CSM to encourage submission of material as a manuscript for publication.
- Coordinate with PASIG Practice Committee to identify tests and measures in need of validation studies.

We would like to solicit your contribution of PA research topics. We will also use the PASIG Description of Specialized Practice to develop this list. As a way to facilitate multi-site research, we propose to post it on our website. If someone develops a protocol that more than one group wishes to contribute to, we'll also post the protocol and contact information. Suggestions are welcomed.

CITATIONS BLAST

To date, the Research Committee has sent out seven Cita-

tion Blasts. The first 3 were sent to the entire Orthopaedic Section membership. After that, if non-PASIG Orthopaedic Section members wanted to continue to receive the Citation Blasts, they needed to join the PASIG. If you are not receiving these BLASTS, please check your junk filter—it may be filtering it out, or check with the Orthopaedic Section to ensure your e-mail address is up to date. We're initiating periodic theme-based citations and are looking for volunteers to write them. Please contact us.

DANCE/USA MEDICAL TASKFORCE ON DANCER HEALTH

In the winter of 2005, DANCE/USA, a national service organization for professional dance, asked the Dance/USA Taskforce on Dancer Health to explore and make recommendations on preventing injury and illness in professional dancers. Specifically, the taskforce was asked to pursue the subject of screening. On 2/18/06, information on screening protocols was presented to the annual Dance/USA Winter Council by the taskforce chair, Richard Gibbs, and Micky Cassella and Heather Southwick, Co-Chairs of the Subcommittee on Screening Protocols. Recommendations for a mandatory annual post-hire health screen for professional dancers were described. This streamlined 30-minute assessment was received with overwhelmingly positive feedback. This is a groundbreaking first step for dance. A preliminary pilot program was proposed as the next step.

Please contact me with any suggestions for the Research Committee or to volunteer.

*Shaw Bronner PT, MHS, EdM, OCS
Research Committee Chair
Email: sbronner@liu.edu*

STUDENT SCHOLARSHIP COMMITTEE REPORT

Chair: Leigh Roberts

Mylah Garlington, MPT, received the first annual PASIG Student Scholarship at CSM 2006 in San Diego for her student research presentation entitled, Prevalence of joint hypermobility and correlation with injury in professional and student modern dancers: A preliminary investigation. Information about the PASIG student scholarship can be found on the Orthopaedic Section website. Case study or research must have been conducted while still a student. Students will first submit an abstract to CSM, then once accepted, you can apply to PASIG for the \$400 reward, used to defray the costs of attending CSM.

The goal for the scholarship committee this year is to increase awareness of the scholarship by: (1) developing a database of current physical therapy programs to facilitate advertising, and (2) developing outreach to PA & faculty researchers and PA-clinical affiliations to encourage student research.

If you are interested in assisting the PASIG student scholarship committee, students are especially encouraged to join, please contact Leigh Roberts at Lar@LarPT.com or 410-381-1574.

Reach Your Professional Goals through Independent Study Courses

Designed for Individual Continuing Education



2006 COURSES

- Pharmacology (January–June 2006)
- Current Concepts of Orthopaedic Physical Therapy (July–December 2006)

CURRENT COURSES AVAILABLE

- Strength and Conditioning
- Postoperative Management of Orthopaedic Surgeries
- Orthopaedic Interventions for Pediatric Patients: The Evidence for Effectiveness
- Marketing Techniques for Physical Therapists
(This is a 3-monograph course. Registration fees: \$80 Orthopaedic Section Members, \$155 APTA Members, \$205 Non-APTA Members, \$5 Shipping and handling included.) (15 contact hours.) (Limited quantity available.)
- Clinical Applications for Orthopaedic Basic Science
- Medical Screening for the Physical Therapist
- Physical Therapy for the Cervical Spine and Temporomandibular Joint
(Only available on CD.)
- Evidence-based Practice for the Upper and Lower Quarter
- Including the Patient in Therapy: Psychological Considerations and PT Delivery
(Previously titled Including the Patient in Therapy: The Power of the Psyche.)
- Effective Prevention and Management of Work-related Injuries
(This is a 3-monograph course. Registration fees: \$80 Orthopaedic Section Members, \$155 APTA Members, \$205 Non-APTA Members, \$5 Shipping and handling included.) (15 contact hours.) (Limited quantity available.)
- Orthopaedic Interventions for Selected Disorders
- Prosthetics and Orthotics
- Current Concepts of Orthopaedic Physical Therapy (2002)
(This is a 12-monograph course. Registration fees: \$215 Orthopaedic Section Members, \$440 Non-Orthopaedic Section Members, \$15 Shipping and handling included.) (84 contact hours.) (Only available until June 30, 2006.)

Course content is not intended for use by participants outside the scope of their license or regulations.

HOW IT WORKS

Each home study course contains 6 monographs (Current Concepts of Orthopaedic Physical Therapy, contains 12 monographs; Effective Prevention and Management of Work-related Injuries and Marketing Techniques for Physical Therapists contain 3 monographs) that you receive in a binder along with a final examination, an answer sheet, and a continuing education form. Each monograph is 16 to 28 pages in length and requires 4 to 6 hours to complete. The monographs contain 10 multiple-choice review questions for your self assessment (answers are on the last page). The final examination consists of multiple-choice test questions. To receive continuing education, registrants must complete the examination and return the answer sheet and CEU form and must score 70% or higher on the examination. Registrants who successfully complete the examination will receive a certificate recognizing the contact hours earned.

For courses in progress, registrants receive monographs monthly and must return their examination within 4 weeks of receiving the final monograph. For completed courses, registrants receive all monographs and must return the examination within 90 days. Exams for Current Concepts of Orthopaedic Physical Therapy (2002) must be returned in 4 months.

If notification of cancellation is received in writing prior to the course, the registration fee will be refunded less a 20% administrative fee. Absolutely no refunds will be given after receipt of course materials.

EDUCATIONAL CREDIT

Thirty contact hours will be awarded for completion of 6-monograph courses, 84 contact hours will be awarded for the 12-monograph course, and 15 contact hours awarded for 3-monograph courses. A certificate of course completion will be awarded to participants after successfully completing the final examination. Only the registrant named will obtain contact hours. No exceptions will be made. Registrants are responsible for applying to their State Licensure Board for CEUs.

REGISTRATION FEES FOR 6-MONOGRAPH COURSES*

- \$160 Orthopaedic Section Members
- \$260 APTA Members
- \$335 Non-APTA Members
- *\$10 shipping and handling included



REGISTRATION FORM

Course Title _____

Name _____ Credentials (circle one) PT, PTA, other _____

Address _____ City _____ State _____ Zip _____

Daytime Phone _____ APTA# _____ E-mail Address _____

Please check: Orthopaedic Section Member I wish to join the Orthopaedic Section and take advantage of the membership rate.
 APTA Member (Note: must already be a member of APTA.) I wish to become a PTA Member (\$30).
 Non-APTA Member I wish to become a PT Member (\$50).
(Wisconsin residents add applicable sales tax)

Fax registration and Visa, MasterCard, American Express, or Discover number to: (608) 788-3965

Visa/MC/AmEx/Discover (circle one)# _____

Expiration Date _____

Signature _____

Registration Fee	_____
<small>(Includes Shipping & Handling)</small>	
WI State Sales Tax	_____
Membership Fee	_____
TOTAL	_____

Please make checks payable to Orthopaedic Section, APTA.

Mail check and registration form to Orthopaedic Section, APTA, 2920 East Avenue South, Suite 200, La Crosse, WI 54601. 877-766-3452

Hello!

I'm thrilled to launch 2006 with the introduction of the Animal Physical Therapy Special Interest Group Strategic Plan, just recently approved by the Orthopaedic Section Board of Directors at the Combined Sections Meeting in San Diego. The officers of the APTSIG ask for your feedback and support as we implement this impressive Strategic Plan and move forward as an advocate for the physical therapy profession in the field of animal rehabilitation. We have established committees that are anxious to welcome new committee members: Research, Practice, Education, and Nominating. An integral branch of the APTSIG is the State Liaison Network, our system tasked with linking APTSIG members, practitioners in the field of animal rehabilitation, and state physical therapy and veterinary boards, for collaboration in communication, education, regulation, research, and practice. We're also very excited to incorporate a Blast Email Service through the Section office to all APTSIG members to further communicate important and interesting issues related to regulatory, educational, research, and practice issues. As well, the APTSIG vows to maintain communication with veterinary organizations and educational programs in order to create more open channels of communication with our membership and to promote the collaborative practice of animal rehabilitation by physical therapists and assistants in cooperation with the veterinary medical profession. Finally, we're just overwhelmed with excitement about the prospect of possible recognition by the World Congress of Physical Therapy and the potential of a future *Journal of Animal Rehabilitation*. Please do not hesitate to contact any of the APTSIG officers at any time. This is a pivotal juncture in the evolution of the animal rehabilitation field and we hope to continue to serve our membership and profession well.

As our newsletter is a means of "meeting" your officers, I'd like to begin this series of introductions to the officers of your APTSIG by introducing myself. Originally from a rural town near Cleveland, Ohio, I earned a bachelors degree in Biology from Slippery Rock University in 1995. As I had no great desire to remain in western Pennsylvania for more than a few years (and with much encouragement of my academic advisor), I was off to Richmond, Virginia for PT school. I (finally) was awarded my masters in PT at the Medical College of Virginia in 1997. (Richmond is also where I met my future husband and the namesake of our "first born," Kate, a Border Collie.) I practiced PT on 2-legged animals in rural southern Maryland and completed a 6-month PNF residency at Kaiser Vallejo prior to being sought out by 2 boarded veterinary surgeons. I began my career in small animal rehabilitation, practicing on 4-legged ani-

mals, in 2001. Since then, I've completed my CCRP through UT/NES and have attended the canine rehab program through ARI/CRI (having yet to complete my certificate). I recently taught an advanced neuro-rehabilitation continuing education course at CRI, incorporating techniques of PNF and NDT-origin in canine rehabilitation, and have joined the faculty at CRI by assisting with the introductory and assistant/technician courses. My career in animal rehabilitation has progressed from an hourly 'as needed' position at a veterinary referral center for less than 2 afternoons per week to owning my own limited liability corporation and contracting professional rehabilitation services to multiple veterinary referral centers in Maryland. I never really intended to get involved in the politics or regulation of this new practice, but given my investment of time, energy, education, and passion, I felt that I had no choice. I welcome other therapists' and assistants' involvement in the APTSIG. Please feel free to contact me directly with questions, with concerns, or to volunteer to help (even in a little way). There's so much that we can accomplish together!

Amie

ANIMAL PHYSICAL THERAPY SPECIAL INTEREST GROUP STRATEGIC PLAN

Mission

The mission of the Animal Physical Therapy SIG of APTA's Orthopaedic Section is to define, advance, and promote the role of the physical therapy profession in the field of animal rehabilitation through education, collaboration, communication, advocacy, and ethical practice.

Vision

The Animal Physical Therapy SIG will be the pioneers and leaders in fostering educated, competent physical therapy practitioners who embrace evidence-based practice to promote the highest quality of clinical practice within animal rehabilitation in collaboration with veterinary medicine.

Goals

EDUCATION: Set standards for programs that prepare physical therapy clinicians to practice animal rehabilitation and provide opportunities for life-long learning through continuing education.

Objectives

1. Perform a practice analysis to determine the unique knowledge, skills, and abilities of physical therapists that practice

in the field of animal rehabilitation by February 2008.

- a. Create a practice analysis plan and budget in 2006.
 - b. Conduct a practice analysis in 2007.
 - c. Submit the completed practice description for publication in a peer-reviewed journal in 2008.
2. Develop curriculum standards for the physical therapy component of post professional education programs that are congruent with the practice description by February 2009.
 - a. Develop curriculum standards for the physical therapy component of post professional academic degree programs.
 - b. Develop curriculum standards for the physical therapy component of post professional clinical residency programs.
 3. Determine and disseminate the career pathway options and opportunities for an individual to become a physical therapist that is an educated, competent practitioner of animal rehabilitation by 2009.
 4. Annually provide continuing professional education related to animal rehabilitation.
 - a. Provide programming at CSM following the SIG policies and procedures developed by the Section's Education Chair.
 - b. Revise and reinstate the animal science independent study course (ISC) sponsored by the Animal PT SIG in 2006.
 - c. Secure authors for future ISC monographs on canine and equine rehabilitation and obtain approval for creating this ISC from the Orthopaedic Section Board by 2007.
 - d. Provide a minimum of one (1) canine or one (1) equine continuing professional education course by 2008.

EVIDENCED-BASED PRACTICE: Contribute to, disseminate, and be a resource for the scientific literature supporting the practice of animal rehabilitation.

Objectives

1. Publish first issue of *Animal Rehabilitation* by 2009.
 - a. Appoint a managing editor and create a budget plan by 2006.
 - b. Select editor, editorial board and reviewers by 2007.
 - c. Solicit articles and advertising 2007-2008.
2. Submit two literature reviews or case reports annually for publication in *Orthopedic Practice* beginning in 2007.
 - a. Utilize the SIG newsletter in 2007 to encourage:
 - i. CSM research presentations.
 - ii. Submissions of case reports and literature reviews in *Orthopedic Practice*.
3. Contribute species-specific research articles to APTA's 'Hooked on Evidence' online database (annually).
 - a. Develop separate categories in database for each species.
 - b. Create basic and clinical research categories.
 - c. Form a committee of SIG officers/members to work

with those from the APTA to contribute research-based evidence to database.

COMMUNICATION/COLLABORATION/ADVOCACY:

Enhance communication and collaboration between and among physical therapy and veterinary medical practitioners in order to promote and enhance the practice of animal rehabilitation by educated, competent physical therapy practitioners.

Objectives

1. Promote ongoing communication with American and international veterinary medical and animal physical therapy associations.
 - a. Encourage physical therapists, especially those who are also licensed as DVMs or RVTs, to routinely participate in veterinary medical and surgical association professional meetings as speakers or exhibitors.
 - b. Promote the establishment of formal liaison relationships between American veterinary medical and surgical associations and the APTA and the Animal PT SIG of the Orthopaedic Section, APTA.
2. Provide information to Orthopaedic Section Members regarding veterinary and physical therapy practice acts in each state.
 - a. Establish website links to each state's veterinary and physical therapy practice acts by April 2007.
 - b. Provide an annual report to the Section Members in OP regarding the licensure requirements for the provision of animal rehabilitation by physical therapy practitioners.
 - c. Recruit at least one SIG Member in each state to serve as an information resource for SIG members and veterinarians regarding the practice of animal rehabilitation by physical therapists. The goal is to have these "state liaisons" of the Animal PT SIG for at least 80% of the states by 2009.
3. Provide information to physical therapy professionals and students, veterinary professionals and students, animal owners, and veterinary insurance providers that describe and promote the practice of animal rehabilitation by physical therapists and physical therapy assistants.
 - a. Create an electronic and printed brochure that can be distributed by the SIG Members to students, practitioners, animal owners, and payers by 2008.
 - b. Create a referral network of SIG members who are active practitioners of animal rehabilitation that can be accessed on the Orthopaedic Section's website by 2007.
 - c. Create adaptations to the Orthopaedic Section's exhibit booth to be used at veterinary professional association conferences by 2008.
 - d. Coordinate 2009 exhibition plans with the managing editor of *Animal Rehabilitation* to market the practice of animal rehabilitation by physical therapy professionals as well as the journal.

S.W.O.T. ANALYSIS

Strengths	Opportunities	Weaknesses	Threats
Passion and energy of leaders and members	Opportunities to collaborate with Vets and et Techs	Need for evidence-based research with respect to animal rehabilitation	Vets and Vet Techs
Knowledge base	Create a profession for the younger generation interested in working with animals but not necessarily as the Vet	Current physical therapy education does not address anatomy, physiology, diseases, conditions seen in animals at entry-level	State practice acts and legislation
Area of practice involving both PTs and PTAs	Increased numbers of animal owners driving the need for these services	Existing certification programs dictate legislation	PTs and PTAs
Services are beneficial to animals	Ability to protect the physical therapy profession while finding a common ground in addressing the needs of animals and their owners	No set of core defined knowledge, skills, and behaviors related to physical therapy practice with animals	Increased specialization within Vet medicine including physiatry and sports medicine
Variety of experiences in clinical practice and backgrounds of leadership/membership	There is financial investment in animals and their handlers with a willingness and ability to pay for the services	No established link with AVMA and no reciprocal organization for this work – No liaison between APTA and AVMA)	No governmental body overseeing the practice of animal rehabilitation
Versatility, adaptability, and tenacity of members	Increased specialization in Veterinary medicine increasing the potential for animal rehabilitation	No defined consensus within the Animal Physical Therapy SIG to be able to speak with one voice and a consistent message	Increased levels of malpractice identified in Vet medicine where it was previously an area of low risk
Able to juggle multiple hats and to multi-task	Increase use of dogs in sports and competitive events		
Able to live with ambiguities in clinical practice and to serve as pioneers	Provide continuing education for members		
	Opportunities to collaborate with Vets for conducting research in support of evidenced-based practice		
	Availability of malpractice insurance through alternative carriers, if allowed by law APTA malpractice insurance will cover		
	Pet insurance identified providers will reimburse for services		
	Basic science research with animals may be more prevalent in support of animal rehabilitation and could inform physical therapy research differently		

ANIMAL PHYSICAL THERAPY SPECIAL INTEREST GROUP BUSINESS MEETING CSM 2006 SAN DIEGO, CA * 4 FEBRUARY 2006

- I. Call to Order at 4:45 PM by Amie Lamoreaux Hesbach.
- II. Amie welcomed all attendees (22) and introduced new officers and present committee chairpersons.
- III. Amie acknowledged and thanked outgoing officers Deb

Gross Saunders, President, and Sandy Brown, Treasurer (both absent).

- IV. Old Business
 - a. Approval of CSM APT-SIG Business Meeting Minutes. Copies were not available for review so this item was deferred.
 - b. President's Report: Amie presented a brief review of CSM 2005 SIG Business, Prestrategic planning meeting in Boston, June 2005, Strategic Planning in Al-

exandria, November 2005. Cheryl Riegger-Krugh presented a summary of current status of Independent Study courses. The Canine and Equine Anatomy and Biomechanics courses were recently retired after 5 years, as is standard for the Orthopaedic Section. The APTSIG requested that the courses be updated and re-released as the material needs little revision and continues to be requested by members. The Orthopaedic Section approved re-releasing both courses in 2007. A member questioned whether the SIG could release the canine course separately from the equine course. Amie to follow-up with the Section.

- c. Vice President's Report – unavailable.
- d. Treasurer's Report – Lin McGonagle (see attached report)
- e. Secretary's Report – unavailable. Amie informed the group of the quarterly newsletter and solicited articles/case studies/contributions. Reminded the group of the next deadline 2/10/06.
- f. Education Report – Gina Epifano reported that the Section will be changing the handouts for future CSMs to go through their website rather than the APTA's website. She is recommending changing the SIG programming day from Saturday to Friday to help increase attendance. Deadline for considering a preconference course is March 31st. Topics are due for next CSM by April 30. Next CSM is in Boston February 14-18, 2007. Feedback from Section Education Meeting is that they are requesting speakers that have capability for video presentations and that AV technicians will be available during presentations. Goals for Education committee include the following:
 - 1) Have dogs present as part of programming possibly for gait analysis or agility presentations.
 - 2) Increase platform and poster presentations.
 - 3) Look into possibility of burning SIG presentations on CDs for sale.
 - 4) Increase equine topics.
 - 5) Look into offering a postconference course.
- g. Practice Committee – unavailable.
- h. State Liaison Coordinator Report – Charlie Evans reported on his updated list of Liaisons – will give to Tara so list can be available on Section web site. APTSIG Liaisons are needed in Washington, DC, Texas, Delaware, Mississippi, New Mexico, Ohio, Oklahoma, and South Carolina. Charlie has also updated the status of state practice acts. There are at least 4 states that now include Physical Therapy in the Veterinary Practice Act. A compiled report will be made available to Tara for posting on the web as well. Nevada recognizes Animal PT and register PT's with the Veterinary Board for \$50/year.
- i. Nominating Committee – Amie reported that the po-

sition of Vice President will be open for the upcoming election.

V. New Business

- a. Name change from Animal Physical Therapist SIG to Animal Physical Therapy SIG.
Charlie Evans made the motion to adopt the name change. Gina Epifano seconded. Discussion: a member questioned if this change was consistent with the *Guide*. Another member cited that "Physical Therapy" is inclusive of PTs and PTAs. Cheryl noted that the title Physical Therapist is protected in many states. Vote: unanimous in favor of name change.
- b. Amie reported that the Orthopaedic Section had approved the Strategic Plan at a Board Meeting last night. The Strategic Plan was explained and revealed to the membership in a power point presentation by Amie. Discussion of each section and suggested changes were noted (see separate document). A motion was made by Cheryl Riegger-Krugh to adopt the APTSIG Strategic Plan. This was seconded by Marilyn Dowd. Vote: unanimous approval of APT SIG Strategic Plan.
- c. Amie called for nominations for the position of Vice President. No nominations were made from the floor at this time.
- d. Amie reported that a Research Committee would need to be established to support the formation of the Animal Rehabilitation Journal. Interested members should contact her. No nominees were suggested from the floor at this time.

VI. Open Forum

Amie informed the group of the 4th International Symposium on Veterinary Physical Therapy and Rehabilitation, October 26-29, 2006, the Netherlands.

Amie also reminded the group about Ablepet's upcoming catalog and an opportunity to list animal rehabilitation practices in the directory.

Cheryl asked about PT being covered under pet insurance policies--a member contributed that some polices do list physical therapy and some will pay for it as part of surgery and recovery.

Amie informed the group of updated APTA web services: "Find a PT" and "Members Mentoring Members" as ways to find other Animal PT practitioners.

WCPT-Amie indicated that there are now enough countries to apply for special recognition for Animal Physical Therapy within the WCPT. The application can now be pursued.

Programming suggestions:

- 1) Gait analysis course include Gait Rite, Biofeedback Technology, and Innovisions.
- 2) Victoria Hale- equine gait and effect on the rehab patient
- 3) Steve Wickler from California Polytechnic Institute

Rose Celebration is no longer Black Tie, more informal. Everyone invited.

The meeting was adjourned at 6:10 PM

Respectfully submitted,
Lin McGonagle, MSPT, LVT
Incoming Treasurer

TREASURER'S REPORT CSM 2006

Total expenses for the 2005 budget year were \$7901.74 and were distributed as follows:

Stationery and supplies	\$163.92
Telephone	\$452.48
Awards	\$43.20
Travel CSM	\$1800.00
Meeting Services	\$275.00
CSM Honorarium	\$1647.50
Strategic Planning Meeting	\$3519.64

Our annual budget from the Orthopaedic Section is \$5000.00. Encumbered funds were accessed to cover the additional expenses incurred by the Strategic Planning meeting in Alexandria, VA on November 18, 2005.

Estimate for the balance of encumbered funds is \$28,979.00.

Goals for the upcoming budget are to support the implementation of our strategic plan, to provide programming at CSM, and to encourage the full participation of SIG officers and chairpersons by expanding the funding for travel to meetings when possible.

Respectfully submitted,
Lin McGonagle, MSPT, LVT
Incoming Treasurer

**Consider Writing
an Article for OPTP**

Instructions for Authors can be found on the Orthopaedic Section Website:

orthopt.org

Publications, Instructions to Authors



therapeutic and rehabilitative products

Useful in treating —

- *Hygroma*
- *Decubital Ulcers*
- *Arthritis*
- *Elbow Dysplasia*

Adjustable DogLeggs

Malden Mills Power Stretch-RX®
 Features 4-way stretch and excellent breathability. Moisture management properties allow skin to stay dry and comfortable while providing support and protection.




- *Non-restrictive*
- *Effective post-surgical coverage*
- *Custom sized*
- *Machine washable*

Call today for information.

DogLeggs
www.dogleggs.com
703-715-0300 • 800-313-1218



OrthoVet Splints

YOUR SMALL ANIMAL SPLINTING SOLUTION



**(541)
544-2435**

267 N. Morrow Road
 Tygh Valley, OR
 97063

**SIZES FOR MOST BREEDS
also, feline sizes**



www.orthovet.com

advertisersindex

AAOMPT	44
Email: philliho@shu.edu	
Academy of Lymphatic Studies	42
Ph: 800/863-5935 • Email: academy@acols.com • www.acols.com	
BTE Technologies	37
Ph: 800/331-8845 • www.btetech.com	
Balance Systems	60
Ph: 800/874-0801 • www.flexextend.com	
Cardon Rehabilitation Products Inc.	Inside Front Cover
Ph: 800/944-7868 • Fax: 716/297-0411	
DogLeggs	63
Ph: 800/313-1218 • Fax: 703/391-9333	
End Range of Motion Improvement Inc.	2
Ph: 877/503-0505 • GetMotion.com	
ErgoScience Inc.	44
Ph: 866/779-6447 • Fax: 205/879-3301	
Kaiser Hospital	55
Ph: 510/675-4259 • www.kaiserhaywardptresidency.com	
Klose Training & Consulting	42
Ph: 970-870-9521 • Fax: 732/ 530-2802 • www.klosetraining.com	
MGH Institute of Health Professions	48
Ph: 617/726-0422 • Email: pt@mghihp.edu • www.mghihp.edu	
Norton School of Lymphatic Therapy	43
Ph: 866/445-9674 • www.nortonschool.com	
OTTP	31
Ph: 763/553-0452 • Fax: 763/553-9355 • www.optp.com	
OrthoVet Splints	63
Ph: 541/544-2435 • Fax: 541/544-2426 • www.orthovet.com	
Pain & Rehabilitation Medicine	50
Ph: 301/656-0220 • Fax: 301/654-033 • Email: Mahan@painpoints.com	
Phoenix, Inc.	48
Ph: 406/549-8371 • Fax: 406/721-6195	
The Pressure Positive Co.	38
Ph: 800/603-5107 • Fax: 610/754-6327 • www.pressurepositive.com	
The Prometheus Group	1
Ph: 603/749-0733 • Fax: 603/749-0511 • www.theprogrp.com	
The Saunders Group, Inc.	Inside Back Cover
Ph: 800/966-4305 • Fax: 952/368-9249 • www.3DactiveTrac.com	
Serola Biomechanics	Outside Back Cover
Ph: 815/636-2780 • Fax: 815/636-2781 • www.serola.net	
University of St. Augustine	13
Ph: 800/241-1027 • www.usa.edu	
UW Hospitals & Clinics	7
Ph: 608/265-8371 • Fax: 608/263-6574 • Email: km.lyons@hosp.wisc.edu	

The Most Versatile Traction System Available

- Effectively treat a wide range of musculoskeletal disorders, even those that are impossible to treat with conventional traction tables.
- Reduce the physical stress and strain on the clinician.
- Designed by one of the foremost experts in traction therapy*
*FREE attendance at Duane Saunders' *Evaluation, Treatment & Prevention of Spinal Disorders* seminar.
- Flexible leasing options and possible tax benefits available.



3D ACTIVE TRAC®



Discover how the 3D ActiveTrac can give you the widest range of therapeutic treatment options.

"One thing we love about the table is that you can use it on everyone, whatever condition they are in. You can adapt the table to the patient and work from there. We are seeing immediate results with a lot of patients."

– Christie Anderson, PT

1-800-779-0670
www.3DActiveTrac.com





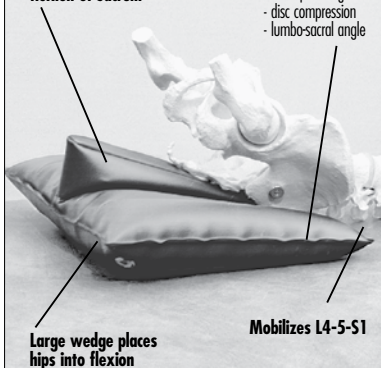
SEROLA BIOMECHANICS

SACROTRAC

Small wedge furthers flexion of sacrum

Reduces

- facet jamming
- disc compression
- lumbo-sacral angle



Large wedge places hips into flexion

Mobilizes L4-S1

SACROILIAC BELT

Thin cotton webbing

- provides stop point to limit excess motion
- invisible under most clothing
- increases patient compliance

Non-slip mesh

- safe, durable
- prevents ride-up
- allows air flow



Extra-strong double-pull elastic

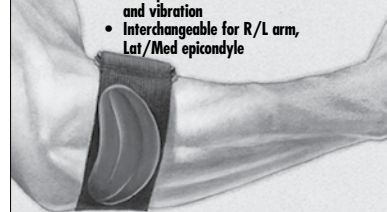
- provides compression and resilience
- woven rather than knitted
- more durable
- heavier gauge rubber
- tighter weave
- much stronger
- lasts much longer

Hook and Loop Closures

- no buckles to pinch or irritate
- allows proper application tension
- will not tighten too much
- easy peel off
- superior shear strength

ELBOW BRACE

- Gel barrier reduces stress at epicondyle
- Unique properties allow superior absorption of both shock and vibration
- Interchangeable for R/L arm, Lat/Med epicondyle



- Flat side for diffuse pressure - bar side for specific pressure
- Foam pad at buckle for comfort
- One size fits all

SEROLA.NET
800.624.0008



Orthopaedic Physical Therapy Practice

Orthopaedic Section, APTA, Inc.
2920 East Avenue South, Suite 200
La Crosse, WI 54601

Non-Profit Org.
U.S. Postage
PAID
Permit No. 25
La Crosse, WI